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ABSTRACT

This paper evaluates the strengths and limitations of a computer tutor designed to help students understand physics concepts. The tutor uses a teaching strategy called "bridging analogies" that previous research has demonstrated to be successful in one-to-one tutoring. The strategy is designed to remedy misconceptions by appealing to existing correct intuitions, and extending these intuitions by encouraging analogical thinking. Through a pretest (N=180) and a video-taped interview study, (N=25), subjects who answered the target for which a misconception existed incorrectly with high confidence and the analogous anchor correctly with high confidence were chosen to participate. Three types of data were collected: (1) notes taken by the interviewer during the sessions; (2) a computer trace of the tutor's actions and user responses; and (3) videotaped recordings of the sessions (which totaled 15 sessions, 3 of which involved student pairs). Results of this formative evaluation indicates that most of the subjects improved their understanding of Newton's third law. Suggestions for improving the computer tutor using artificial intelligence technology were discussed. Appendices include the program data structures and algorithm, and an example section of a trace file. (YP)

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draft

An Analogy-Based Computer Tutor for Remediating Physics Misconceptions¹

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Abstract

We describe a computer tutor designed to help students understand physics concepts. The tutor uses a teaching strategy called "bridging analogies" that previous research has demonstrated to be successful in one-on-one tutoring. The strategy is designed to remedy misconceptions by appealing to existing correct intuitions, and extending these intuitions by encouraging analogical thinking. Students were videotaped while using the program and were encouraged to think aloud. The strategy was successful in changing beliefs for some students. We outline suggestions for improving the tutor using artificial intelligence technology.

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1 Context Specific Tutoring Strategies

We report on a computer simulation of a human tutoring strategy that previous studies have shown to be effective in one-on-one human tutoring. The purpose of the research has been to evaluate the strengths and limitations of an automated version of the strategy, which we envision as ultimately being one of several strategies available to an intelligent computer tutor.

To date, most Intelligent Tutoring Systems research has focused on the design of semantically rich learning environments, or on the conceptual analysis of topic areas and tasks. Though these efforts are important, this paper addresses the paucity of research dealing with the act of tutoring itself. Though many intelligent tutoring systems incorporate expertise in teaching, diagnosis, and communication, few reports of such studies are *explicit* about the following: 1. the teaching strategies used; 2. the assumptions about learning and teaching that underpin these strategies, and 3. the precise rules or algorithms that instantiate these strategies. Sharing this information is conducive to the comparative analysis of tutoring system descriptions. It also encourages the proliferation of research that confirms or extends the findings of studies designed to test or evaluate tutoring systems.

Many existing ITS systems teach skills or procedural knowledge. Examples are Shute & Bonar (86) and Streibel et al. (86) (scientific inquiry skills); Brown et al.'s SOPHIE (82) and Clancey's GUIDON (82) (diagnostic skills), and Anderson et al.'s LISP tutor (85) (programming skills). Our

research is aimed at remediating *conceptual* difficulties, in contrast to remediating bugs in factual or procedural knowledge. Other ITS efforts are aimed at teaching conceptual knowledge, but they do so by making use of the computer's unique ability to simulate physical systems. In the present work, we use a discourse strategy to appeal to the logical and/or intuitive sensibilities of the learner. Incorporating semantically rich learning environments in our system at this point would cloud the research questions, although maximum learning leverage would of course be obtained in a system using both a rich environment and intelligent discourse.

The computer tutor described here has been designed to simulate a human tutoring strategy (as discussed in Clement 87). The strategy remedies misconceptions by appealing to existing correct intuitions, and extends these intuitions to a broader context by encouraging analogical thinking. The tutor presents the student with situations that bridge the conceptual gap between simple situations (those for which most students have correct intuitions) and difficult ones (those for which most students exhibit misconceptions). The strategy is invoked when the student is diagnosed to be harboring a misconception, as evidenced by an incorrect answer to a target problem. The tutor then attempts to find an "anchor" situation, i.e. an analogous situation for which the student has a correct intuition. For the domain we are investigating, an example target problem is the question of whether a table exerts an upward force on a book that rests on it. Many

students exhibit the misconception that rigid objects cannot exert forces. A typical anchoring situation is a book being held in a person's hand. Most students will agree that the hand exerts an upward force on the book. Typically, however, the student does not immediately believe that the two situations above are truly analogous with respect to the questions being asked. Intermediate analogous situations, called "bridging analogies," are used to bring the correct intuitions to bear on the target problem. For example, a bridge between the book on the table situation and the book on the hand situation is a book on a spring. Bridging situations are presented one at a time to the student, chosen according to the student's previous responses, as described later. The student is asked to compare (in his head or out loud) his response to the bridging situation with his response to the target problem. After the comparison, the student is allowed to change his answer to either situation. If his answers to the two situations differ, the comparison encourages the cognitive conflict that can motivate him to think more carefully or differently about both situations. Regardless of whether his answers to the two situations agree or disagree, the comparison encourages the student to consider the (potential) analogy between the two example situations. If the comparison is pedagogically successful, the student will see the target problem in a new light and change his response for it. This strategy has proven successful in remediating physics misconceptions in several studies involving human tutoring (Clement & Brown 84).

An important characteristic of the bridging analogies strategy is that it withholds giving the student substantive feedback except for situations where there is no alternative. This strategy, which is in concordance with a constructivist teaching philosophy, has been used in classroom teaching and one-on-one tutoring (Clement & Brown 84) to encourage active learning and to discourage passive acceptance of information and answer-oriented student behavior, which can lead to shallow understanding in conceptually difficult domains.

Human tutors operate with a battery of tutoring strategies, many of which are relevant only to specific contexts. We envision the bridging analogies strategy as one of many tutoring strategies that an intelligent computer tutor would have at its disposal, selecting each (or combinations of them) according to context applicability rules. We see these strategies as "strong method" solutions to the computer tutoring problem because their appropriateness is context dependent, relying on information about the student, the discourse state, and the topic characteristics. A strong method strategy is a specific algorithm or set of rules. Tutoring guidelines or strategies mentioned in previous research are usually "weak methods." They are more generally applicable, but not as specific as context specific strategies. Context specific strategies should be more potent when used in their intended instructional context. Examples of weak method strategies are "provide concrete examples of, as well as descriptions of, concepts" (Burton & Brown

82), "provide immediate feedback for errors" (Anderson et al 84), and "let the student learn from mistakes" (Brown, Burton, & deKleer, 82). Our strategy is also a "strong method" in the sense that it incorporates a substantial amount of domain-specific information, in the form of the example network

The bridging analogies strategy is particularly applicable to the following context: topic areas with a qualitative, conceptual focus, where deep seated misconceptions exist, and where correct intuitions (anchors) also exist. Basic Newtonian mechanics is a domain which contains many such topic areas, one of which provides the focus of our study. Real-world experiences result in a wealth of intuitions about how the physical world works. Some of these are in accordance with scientific laws, and others are in conflict with them.

In its current form, the bridging analogies tutor is not intended to be used in a stand-alone fashion to teach. It is an encoding of a specific teaching strategy which research has shown to be effective in certain contexts. The purpose of the research is to evaluate the strengths and limitations of a computer version of the strategy. Ideally, the effectiveness of each of the strategies employable by a computer tutor should be researched. Our view is that it is desirable to test such strategies independently, first off line, and then in a prototype program. In this way, a great deal is known about how students react to these strategies before a large effort is expended in building an intelligent tutoring system based upon them. Of course, further research

is then needed to determine how to integrate several tutoring strategies into a single system.

Research questions

At the outset of the research there were several key questions:

- What aspects of the bridging analogies strategy are most and least effective for remediating misconceptions?
- Can a computer tutor successfully use a low-feedback response strategy?

Longer range questions that we are addressing are:

- Is it possible to determine dynamically during a computer tutoring session when to use the bridging analogies strategy and when to switch to another strategy?
- What other tutoring strategies might be effective for teaching science concepts where bridging analogies fail?

2 Misconceptions in Science Education

Research has investigated students' conceptions about important mathematics and science concepts as they exist prior to formal instruction (sometimes called preconceptions). A surprising number and variety of misconceptions

(incorrect preconceptions) have been uncovered in domains such as electricity (Steinberg 83, Fredette & Lochhead 80), biology (Wandersee 83), statistics (Tversky & Kahneman 74), and classical mechanics (Hestenes 85). Often these misconceptions are deep-seated and interfere with problem solving in the domain. Such incorrect beliefs are not limited to certain age groups or academic areas. Serious misconceptions are common even among students taking calculus-based physics courses and students who are proficient at quantitative problem solving using formulas. These debilitating beliefs must be dealt with explicitly in instruction. They are not simply "erased" when conflicting and correct knowledge is conveyed to the student. Many of these misconceptions are commonly held, so that attempts to discover and remedy the most common of them will benefit a large percentage of students. For instance, in a survey of 112 high school chemistry and biology students who had not taken physics, Clement (87) found that 76% of the students did not believe that a table exerts an upward force on or pushes up on a book resting on it (83% of these students indicated a high confidence in their incorrect answer), a belief that is contrary to classical mechanics.

Several studies have shown that misconceptions such as the ones cited are quite resistant to remediation (i.e. they are "deep misconceptions") at least via traditional instructional methods. Halloun and Hestenes (1985) administered tests of basic concepts in Newtonian mechanics (motion and its causes) to over 1000 college level introductory physics students over a

three year period. The primary diagnostic instrument consisted of multiple choice questions about very basic concepts, such as: "if a ball is shot out of a semi-circular tube, what is the shape of its path after leaving the tube?" (the student was to choose between pictures of five path shapes). Average scores before instruction were "very low," (about 45%) even for university physics courses where 80% of the students are engineering majors, and 80% have taken calculus. Most importantly, the *post-instruction* scores showed little improvement (11 to 15%). This scant gain was remarkably independent of such variables as instructor, mathematics ability, and final course grade.

Previous studies suggest several possible sources for students' misconceptions. White & Frederiksen (86) note that misconceptions can result when the cognitive jumps required of a student while learning a new domain are too large or too under-specified. Learners can then fill in the gaps in unpredictable and uncontrollable ways. Similarly, diSessa (83) discusses how misconceptions can result when learners try to accommodate to new information by incorrectly synthesizing existing fragmented and inconsistent pieces of knowledge. VanLehn (83) has constructed a detailed theory of how procedural knowledge is modified ("repaired") in an ad-hoc way when an impasse is encountered during problem solving. A similar mechanism may account for some (non-procedural) misconceptions. Claxton (85) points out that preconceptions can be founded on physical experiences ("gut science") or on social experiences ("lay science"), and that these concepts can con-

flict with the formal and abstract concepts of "school science." Students are often perfectly content with or unaware of their conflicting beliefs if the contexts in which these beliefs are used do not overlap, such as in everyday life vs. taking exams.

Many misconceptions result from repeated attempts at comprehending real world phenomena. Some of these beliefs have been used again and again to successfully cope with or explain real world events. Therefore it is not surprising that some misconceptions are deep seated, and that some are quite common. Some domains, such as physics (McCloskey 83, McDermott 84) and statistics (Tversky & Kahneman 74), are particularly susceptible to the existence of misconceptions⁴. In such domains careful sequencing and explanation of new information, without using knowledge of the student's prior beliefs, is probably not sufficient to lead to understanding. Existing misconceptions must be directly addressed with innovative instructional approaches.

3 Pedagogical Approach

Here we describe the tenets and assumptions which underpin our approach. We have already mentioned several results of previous research: that debilitating misconceptions are widespread and resistant to change; that in-

⁴Clement (1982) has documented remarkable similarities between students' misconceptions and pre-Newtonian theories such as those of Galileo.

tuitive anchors exist; and that presenting students with bridging analogies and encouraging comparisons between analogous situations can overcome misconceptions

Our approach is also founded on the constructivist paradigm for learning (Piaget 72, Lawson & Wollman 75, von Glasersfeld 88). This paradigm holds that learning is not a passive process of allowing incoming information to be imprinted in the brain, but an active process of trying to maintain equilibrium in a changing environment.

Overcoming deep seated misconceptions involves the modification of existing schemata. For such conceptual change to take place the student must first experience some cognitive dissonance around the misconception. We encourage this dissonance by juxtaposing example situations (or thought experiments) for which the student has given contradictory (according to physics) predictions, and then asking the student to compare them. Since the goal of the tutor is for the student to interpret familiar situations in a new way, rather than simply to convey new information, it is important that the student is actively engaged in applying and critiquing his existing beliefs. The teacher cannot change a student's beliefs, the student must reconstruct his own beliefs. For this reason we are experimenting with the approach of withhold feedback considerably longer than is the practice in most other pedagogical styles. We not only withhold revealing the correct answers, but we also withhold feedback on whether his answers are correct

or not. This shifts the emphasis from getting correct answers to thinking about the questions. It allows greater focus on whether answers *make intuitive sense*, the student's *reasons* for answers, and the *interconnectedness* of knowledge. At the Scientific Reasoning Research Institute (SRRI) the instructional methodology of withholding substantive feedback from students has been used successfully to teach mathematics and science in many tutoring situations (Lochhead 83).

The bridging analogies tutor rarely tells the student if her answer is in accordance with the physicist's view ("It *does* reveal the correct analysis of example situations when no bridge is available.) The end effect is that the program generates discourse that has a flavor similar to: "What do you think of [a situation]? OK, now what do you think of [another situation]? Please compare the situations and comment on similarities and differences. Now, what do you think of [a third situation]? How does thinking about it affect your beliefs about previous situations?" Here there is essentially no feedback. The instructional leverage comes from careful sequencing of the example situations.

In teaching other topics, or in teaching other types of knowledge (skills or factual knowledge for example) immediate feedback may be necessary. Even in domains such as the one we are dealing with, withholding feedback, if taken to an extreme, of course has its limitations. The discourse can stray so far from the goal that consolidation becomes difficult. Also, students have

varying degrees of tolerance to engaging in instructional dialogue without feedback. Human tutors can sense when the discussion has strayed too far, or when the student's frustration is debilitating. In this study we wish to test the benefits and limitations of using a low-feedback response strategy on a computer tutor.

The bridging analogies strategy is a Socratic teaching method (Collins 77) in that it involves reasoning from specific cases, and the focus of the instruction is on strategically posing questions (as opposed to say, conveying information or demonstrating principles). The instructional goals of the bridging analogies tutor are a subset of those addressed by Collins & Stevens' WHY system. Our system aims at remediating deep misconceptions in domains where conceptual anchors exist. The WHY system was designed to teach about causal dependencies in a complex physical system, and also at teaching inquiry reasoning skills. As a subgoal of its major goals, the WHY system addressed the remediation of misconceptions. (Apparently, no data is available on the WHY system's tutoring effectiveness.) It based its remediation on a formal analysis of necessary and sufficient conditions, appealing to the student's logical thinking abilities. Our tutor uses an empirically derived network of example situations, and tries to appeal to the student's intuitions and existing correct (anchoring) concepts. Also our feedback strategy differs considerably from that used by Collins & Stevens.

4 The Bridging Analogies Tutor

Clement & Brown (84) have developed a teaching strategy, called "bridging analogies," which utilizes correct intuitions (which they call conceptual anchors) and appeals to students' analogical reasoning to help them extend their correct intuitions to target situations for which they have misconceptions. After the student gives an incorrect analysis of a situation (the original target) that indicates the existence of a misconception (indicating in this case that rigid objects cannot exert forces), she is presented with an analogous situation (such as a book in a hand) which is intended to serve as an anchor. In the classroom, situations must be chosen which are expected to be anchors to the majority of the class. In one-on-one tutoring, an anchor can be found with a series of questions. In either case, previous research must establish which situations are useful anchors for a given domain.

If the student answers the anchor correctly she has given contradictory answers for the target and anchor situations. In effect, she does not see them as analogous. The bridging analogies strategy attempts to bring the student to an understanding of this analogical relationship by presenting a sequence of intermediate analogies (called "bridging analogies"). At some point (or points) the student should be faced with considering two situations for which she has given contradictory answers yet which she realizes are analogous. The cognitive conflict which results should motivate her to change her mind about the misconceived situation.

For computer implementation, the strategy was formulated as a procedure that traverses a pre-defined network of example situations according to student responses to questions.⁵ The computer version of the strategy cannot respond to creative student insights, but it can tailor its presentation of examples personally for each student. We have used the program for different domains, but below we describe its implementation in teaching about the existence of opposing contact forces in static situations. This is the domain used for the majority of our research.

The example situation network

Available for every example situation are:

- a description of the situation
- a more detailed description
- a question with multiple choice answers
- an explanation of the correct answer
- a picture

The bridging analogies tutor makes use of a network of example situations (see Figure 1). For each pair of linked situations, such as the book on

⁵In this section we give an operational definition of the procedure. See Appendix A for a more precise description of the code implementing the strategy.

Simplified network of example situations for existence of normal forces

Figure 2: Complete network of example situations

the table (node 1) and the book on the spring (node 4), a bridging situation is defined—a book on a flexible board in this case (node 8). This network is an abbreviated version which we will use to simplify the explanation of the tutor. The network actually used by the program is shown in Figure 2⁶. It starts with the more difficult “fly on the road” situation rather than the “book on the table.”

The network is structured so that a bridging situation shares key features with its corresponding anchor and target situations. For example: a table is rigid and has no volition (i.e. can't decide to push). The hand has both mobility and volition. The spring has mobility (flexibility) and no volition. The bridging situations were originally conceived by considering these kinds of feature similarities. But more importantly, the bridges and anchors in the network are based on previous experiments designed to test effective bridges

⁶The initial anchor for the network used in the study, node 0, is a “null node.” Null nodes are ignored by the program. In this case node 0 was included to force the program to give the book on the table situation directly after the fly on the road situation. The inclusion of this node was, in hindsight, perhaps unnecessary, and its existence in the network complicates an explanation of the network.

Figure 3 A sample dialogue showing the original target and anchor

and anchors. The network used in this study was thus in part empirically derived, and not constructed explicitly according to feature-based rules. It was, for the most part, designed and tested before this computer tutoring study was conceived. In this study we have used the existing network with few changes. Our (post-hoc) feature-based analysis of the network appears in the discussion section of this paper.

Finding the anchor

When the student's answer to a key target situation indicates a misconception, the bridging analogies strategy is invoked. The goal of the strategy is to bring the student to an intuitive understanding of the target situation, as indicated by her changing her mind about it (and indicating a high confidence level, as described later). Figure 3 shows a sample dialogue including the book on the table and the book on the hand situations, accompanied by the diagrams shown to the student.

Comparison questions

At certain points during a tutoring session the computer encourages a comparison of two previously seen example situations. The comparison reminds the student of her answer to two previous situations, highlighting whether

they agree or not. She is then asked to explain⁷ why these answers are the same or different, and is given the option to change her mind about either or both answers. See Figure 3 for an example of the comparison question

The comparison has several purposes. First, it highlights potential contradictions in answers which, if the student sees the situations as truly analogous, fosters the cognitive dissonance (or "disequilibrium") which motivates changes in belief about the misconceived situation, and ultimately, the construction of new concepts. Second, it tests the stability of answers, giving the student a chance to re-think answers. Lastly, it encourages analogical thinking by asking students to continuously juxtapose different example situations in a given domain. Note that the student is not told that the situations should be analogous. No direct feedback is given after she answers a question

After the anchor has been selected, she is asked to compare the target situation with the anchor situation. The network is designed so that the target problem invokes incorrect intuitions and the anchor invokes correct ones for most students. Even though they are analogous to a physicist, most students are content with their conflicting answers, and will choose not to

⁷The explanation is to herself or out loud to an apte viewer. No text is typed in at this point. At our current phase of the research, we feel that such information is too difficult to analyze automatically, and the effort of typing in such an explanation may hinder the students' motivation and limit their responses to very short ones.

change either of them.

Bridging between the target and the anchor

Given a target situation (for which a misconception exists) and an analogous anchor situation (for which a correct concept was demonstrated) the tutor next (see Figure 4).

1. Looks up which example situation splits in half the conceptual distance between the two, i.e. it chooses a bridge, and asks a question about it,
2. Asks a comparison question to help the student establish the analogical link between the anchor and the bridge, and
3. Asks a comparison question to help the student establish the analogical relationship between the bridge and the target, with the hope that the student will change her mind about the target situation.

Since the algorithm is recursive, the status of a given example situation, whether it is a target, anchor, or bridge, can change as the tutoring session progresses. In order to bridge between 3 and 1 (in figure 1) it may be necessary to bridge between 3 and 4, then between 4 and 1. If this happens, situation 4 is first a bridge (as it is initially asked), then a target (after it is answered incorrectly) and then an anchor (after the student changes her

Figure 4: Diagram of the bridging analogies strategy

answer to a correct one). Thus, when we refer to a target, anchor, or bridge, we refer to the current status of that example situation

In Figure 1 we see that the first bridge is the book on the spring (node 4). If the student answers incorrectly about the bridge situation (or changes her answer to incorrect as a result of the first comparison), then the tutor sets up a subgoal to tutor for understanding of the bridge situation. In that case we are back in our original condition, having a misconceived situation (the book on the spring), and an anchor (the book on the hand). The entire strategy is invoked recursively, first identifying a new bridge between the two (a hand on a book on a spring in this case). Levels of sub-problems and bridges are presented until the student's misconception about the original bridge (the book on the spring) is (apparently) remedied (see Figure 4), and the anchor-to-bridge analogy is established.

Once the bridge situation is understood and the anchor-to-bridge analogy established, we wish to establish the bridge-to-target analogy, thus constructing a path of analogies or conceptual links connecting the anchor with the target. The strategy compares the bridge (the book on the spring in this case) with the target problem (the book on the table) with the hope that the student will change her mind about the target. If the student does so we are done. If the student does not opt to change her mind about the target,

we are back in our original condition, having a misconceived situation (the book on the table) and a correctly conceived one (the book on the spring). The algorithm is invoked again to establish the bridge-to-target analogy, beginning by finding a new bridge (in this case the book on a flexible board) and so on.

One perspective on the strategy is that it keeps splitting the conceptual difference between the simplest misunderstood situation and the most difficult understood situation. Eventually it provides the student with an analogical path from the original anchor to the original target, such that the gaps between neighboring situations are close enough for the student to perceive the analogy. Splitting the difference at each step is more efficient than walking the student through every smallest step of the entire set of example situations linking the target with the anchor. The dark line in Figure 1 shows one student's journey through the network. The path shows the order that situations were understood, rather than the order in which they were introduced. For example, situation 4 was given and answered incorrectly, then situation 5 was given and answered correctly, and then the student opted to re-visit and change her mind to a correct answer for situation 4.

Explanations for example situations

There are two circumstances where a correct explanation of an example situation is given to the student. One is when the student, after a compar-

ison, opts to change her mind about an anchor and changes it from right to wrong. At this point we have no more graceful method for dealing with these "regressions". They occur very rarely in our tests so far.

The second condition warranting an explanation (i.e. the student gets immediate feedback after a wrong answer) is when there is no bridge in the network between the current target and anchor, between nodes 5 and 7 for example. The explanation is given, often suggesting that the two situations are analogous, and the student is asked the problem question again.

An typical example of an explanation is (for node 4). "The spring IS pushing up on the book. When you push down on the spring, the spring compresses some and pushes back."

Confidence checking

A severe drawback to computer tutoring, as compared with human tutoring, is the computer's inability to ascertain the types of affective information about the student that are evident to human tutors from facial expressions, vocal inflections, etc. Information about students' certainty level, confusion, boredom, excitement, etc., are crucial to effective human tutors.

Human tutoring studies at the University of Massachusetts have used "how sure are you" or, alternately, "how much sense does the answer make" scales to gather additional information about the strengths of anchors and the effectiveness of the bridging strategy in changing students' beliefs. Sim-

ilarly, the computer tutor asks the student to rate her confidence in her answer on a five point scale after each question (as shown in Figure 3). The program combines this information with information about the correctness of the answers in deciding whether to ask for comparisons, and whether to bridge (see Appendix A for details).

Since confidence information is important, following each comparison the student is allowed to change her confidence about a previous answer as well as changing the answer itself. We have noted in some human tutoring sessions that asking students to commit to a confidence rating causes them to put additional cognitive effort into analyzing the example situations.

Topics

Each network corresponds to one (and only one) topic area. In this paper we describe results for only the topic "existence of contact forces between two stationary objects" whose network is shown in Figure 2. Another topic given to some subjects in this study was "equality of contact forces between two stationary objects." Though we have thus far tested only these two topics with students, the tutor is capable of teaching an arbitrarily long sequence of topics. For each topic area the goal of the tutor is to help the student understand the qualitative physics of a key target situation which exemplifies an expert application of the concept. If the student responds incorrectly to the target situation, then the bridging analogies strategy is

invoked. If the student responds correctly to the target problem, the tutor moves to the next topic. If there is any overlap between example situations in the topic areas, the program takes into account previous answers about the situations.

During comparisons the tutor asks the student to explain why her answers to two different problems were the same, or to explain why they were different. For the tutor to be able to do this, all of the problem questions within a network must be similar. This tends to limit topics to relatively small curricular areas, and it also limits the diversity of examples that can be included in a given network. For example, for a network dealing with the existence of static forces all of the questions have multiple choice answers similar to "xxx IS exerting a force up on yyy" and "xxx DOES NOT exert a force up on yyy." For the network dealing with the equality of forces (i.e. that the forces are equal and opposite) all of the problem questions have multiple choice answers of the form "xxx pushes harder." "yyy pushes harder," or "they both push the same amount."

Other features of the tutor

The bridging analogies tutor is written in PASCAL and runs on an IBM PC. The tutor has been designed to be domain independent. Domain-specific information is stored in text files separate from the code, and these are processed at run time. The specification of the network structure, as well

as information about the example situations, can be easily modified, or new domains created from scratch, by straightforward editing of text files. However, it is not easy to design *effective* networks of anchors and bridges. This requires research iterations with human subjects.

Figure 3 shows examples of the graphic pictures that accompany the descriptions of the example situations. Created using the PC-Paint (trademark of Mouse Systems) program, their inclusion is optional.

All student input is through menu selections. The use of menu-driven options, and of multiple choice answers, allows us to bypass difficult problems of language recognition involved in interpreting student input. Multiple choice answers can include reasons for each of the answers, incorporating items which catch common wrong answers and misconceptions. Usually, reasons for a student's answer are just as important as the correctness of the answer.

Example situations can have two levels of description associated with them. After being presented with a description of a new situation, the student is asked if she wants a more detailed description. The detailed description attempts to address possible areas of confusion.

5 Formative Evaluation of the Tutor

The purposes of this phase of evaluating the tutor are to determine what aspects of the simulated strategy are effective. We are also interested in

information leading to alternative computer tutoring strategies to be used where bridging is not effective. In addition, we seek information concerning how effective the tutor is for a pair of students using it in collaboration.

Experimental method

A pretest was administered to students in several university classes. A total of 180 students were given four example situations with questions and confidence ratings. None of the questions were the same as the ones in the tutor's network. One situation was similar to the target problem, involving contact forces on a medium sized object resting on an inflexible object. Another was similar to the initial anchor, where one object was held in a hand. To conduct a formative evaluation of the tutor we were looking for students for whom the particular network we used was designed, i.e. those who demonstrate understanding of the anchor and lack of understanding of the target problem. Eighty four percent of the students answered the anchor-like problem correctly, and 68 percent answered the target-like problem incorrectly. Sixty six percent got both the target wrong and the anchor right. These figures are in rough agreement with the results of previous studies (Clement & Brown 84).

Of the students who took the pretest, 53 percent volunteered to be subjects for a one hour video-taped interview study, for which they would be remunerated 5 dollars if chosen. The distribution of correct answers on the

pretest did not differ significantly between those who volunteered and those who did not.

Twenty five students were selected for interviews. The selection of students was biased toward those for whom we thought the strategy, and the network used, were most appropriate. Those who answered the target incorrectly with high confidence and the anchor correctly with high confidence were given preference. Three of the sessions involved pairs of students using the tutor (they were asked to discuss each question and decide together what answer to give). There were technical problems (including power outages), and several students unexpectedly answered the original target correctly with high confidence right from the start, in which cases the bridging analogies strategy is not invoked. In the end we had a total of 15 sessions (three of which involved pairs of subjects), lasting approximately 45 minutes each, with useful data from the book on the table network.

Data analysis

Three types of data were collected: notes taken by the interviewer during the sessions, a computer trace of the tutor's actions and user responses, and videotaped recordings of the sessions. We have completed a first pass analysis of the video taped recordings (see Schultz et. al. (87) for a protocol analysis report). Here we will outline our method for analyzing the computer traces. The trace records important events in a readable form (see

Figure 5. Diagrammatic Representation of the Program Trace

Appendix B for an example) This information was transferred (by hand) to a diagrammatic representation, as in Figure 5. Circled nodes are those visited. Next to each circled node the correctness of the answer ("OK" for correct, "X" for wrong) and the confidence rating (from 1-blind guess to 5-I'm sure) are recorded. Single line arrows go from targets or anchors to the next bridge. Double lined arrows go from bridges to targets, and show where the subjects changed their mind from wrong (or correct with low confidence) to correct (with medium to high confidence) for the problem pointed to. Circular lined arrows which connect a node with itself represent changing their mind about the question most recently asked, or, if an "E" is shown, they were given an explanation and asked the question again (as would happen if no bridge were available between two nodes). Not represented in the diagram, but easily inferred from the information in it, are the places where the tutor asks for a comparison between the most recently given situation and a previous one. Recall that after each such comparison the student is asked if she wants to change her mind on either or both situations.

Data analysis is greatly enhanced by the diagrammatic representation. The subjects' path through the example network, their changes of mind, and where explanations were needed, are highly visible. The regions of the

net where the subjects needed the most bridges are apparent. From this we can infer which attributes of the original target contributed to their misconception.

For each subject's network, the following information was summarized: the number of nodes visited, the number of explanations given, the number of changes in mind, the total change in the original target problem from the beginning to the end of the session, the "critical points" (defined below), and the "focal regions" (defined below).

The network was divided into four "focal regions," each addressing a different key attribute of the target problem. The "focal regions" data specifies in which regions the subject visited two or more nodes.

"Critical points" changes give a more reasonable estimate of the student's thinking than the total changes of mind, and are defined as follows. Often, one realization on the part of the subject leads to changes of mind for several situations. For example, a student who is being shown a hand on a flexible table situation (node 10) is four recursive levels deep in the algorithm, having answered incorrectly questions about a book on a table, a book on a flexible board, and many books on a flexible board. Assume that the hand on the board is a critical analogy for this student. After answering it correctly he may realize that several of his previous answers should be changed. As the algorithm unwinds (see Figure 4), he would be given three comparison questions in a row, and opt to change his previous answer for each of these

to the correct one with high confidence. When the subject changes his mind in a "chain" like this, all changes can be the result of a single change in belief. "Critical points" are the first change in any chains of one or more changes

Summary of the results

Following are our observations from the protocols and the computer traces. Since this evaluation of the tutor is formative in nature we did not perform a detailed statistical analysis, nor does our sample size permit this kind of analysis. Much of our interpretation of the data is specific to the observations. To improve readability we will fold these interpretations in with the data in this section. Interpretations specific to observations follow those observations and are in italics. Some observations are accompanied by illustrative quotations from the video tape protocols.

At the end of the sessions all but one of the 15 subjects had high confidence in the correct answer to the original target situation, and most of their verbal reasons indicated that the correct answer made sense to them at an intuitive level. Nine of them started the session with high confidence in the wrong answer to the original target. (The rest started with low confidence in the wrong answer to the original target.) *This is an indication that most of the subjects improved their understanding of Newton's third law as it applies to static situations. An exemplary quote is given below:*

[A student is considering the book on the table problem.]

Um ... I still don't think that ... unless we're talking about molecules, I mean, unless we're talking about the book on the table [pause] would actually mean that there *are* molecules pushing up on the book. I guess just pushing back *would* be exerting a force [pause] Well, actually it *can't* be wrong if the molecules are pushing up, then it *has* to be exerting some kind of force on the book.

Analysis of the critical points of the session shows that the analogical comparisons alone (without an explanation) motivated at least one change of mind from an incorrect to a correct answer for 50 percent of the subjects.

[Student is asked to compare situations 8 and 1]

... and it's not sturdy at all, and so it *has* to be exerting some kind of force up to keep ... [laughs] This is like blowing my whole theory. The book on the board, the book is pressing down on the board, and it's bending it. In order for the board not to bend all the way, it has to exert some kind of pressure, but it kind of makes me think about the book on the table exerting force.

This suggests that bridging and analogical comparisons are effective instructional strategies for many students at least locally (i.e. if the analogy is not too distant), though perhaps not when used exclusively.

Nine of the subjects needed at least one explanation at some point in the session. *These indicate places in the network where another bridge could be added.*

There were two instances of what we call regression, in which a student, after a comparison question, attempted to change her mind about an anchor from correct to wrong. Also, there was one case in which a student did not answer correctly about the original anchor with medium or high confidence (in which case the program had to explain the answer to the original anchor). *That these numbers are low indicates that the anchor used was an effective starting place for remediating the primary misconception.*

Most of the subjects needed to pass through a node which described all matter as being composed of molecules connected by springy bonds (node 11). Since designing the network we have come to regard such bridges as "microscopic models." Microscopic models of physical phenomena may give students a deeper causal explanation of the phenomena than other bridges. *It is not clear whether their misconception concerning the book on the table could have been remedied for these subjects without the use of a microscopic model.*

On the average, 7.5 example situations were needed to bring the subject to a successful conclusion of the session. *This supports the need for many nodes in the networks, and indicates that the original anchor and original target were indeed distant analogies.*

Most of the explanations that were given occurred in the focal region of the molecular model example. *This indicates that more example situations are needed to expand this area of the network.*

Only one of the 15 subjects spent any time in the focal region of the network between the book on the spring and the book on the hand. *This suggests that the book on the spring would serve equally well as the original anchor. (This finding is in agreement with the results of previous experiments (Clement & Brown 84)).*

Included in our data is a compilation of the reasons students gave for their answers to selected example situation questions. We will not discuss these in detail here, but note that this data could be used to improve the network by including new situations which address common misconceptions indicated by these reasons.

I mean, I know that the fly is staying there by some force,
but it's gravity, it's not that the ... I don't think that the road
is pushing up on the fly. It's gravity that's keeping the fly there
You know what I mean?

We did not observe that asking confidence questions caused a significantly greater cognitive involvement in the subjects, as we did for some previous human tutoring sessions. We could not observe the contrary either, because the interviewer encouraged subjects to think aloud and give reasons for answers, which they did fairly constantly when answering the

example situation questions, *before* they were asked the confidence question. *The question of whether the confidence question stimulates additional reflection needs further study.*

There was no evidence of subjects being overly annoyed or frustrated by the low feedback nature of the response strategy. In general, they seemed to accept this style without question and remained focused on thinking about the situations and comparisons given.

[One student's comment on the tutor's feedback:]

It's helpful when it goes back and tells you to look at your answers, and then, once you've thought about it ... it forces you to think about it, because it keeps bringing it back, and then if you're totally wrong on something ... *then* it will say to you, you know, *this* is the way it is, and you're like—it makes you think at first, instead of kind of giving you a hint at first. I think that's better.

Since our experimental setup is somewhat dissimilar to a student using a computer tutor by herself, conclusions based on this observation are limited. The data shows no evidence that a low feedback strategy is ineffective when implemented on a computer tutor.

We observed that, though the algorithm used to traverse the network was not complex (see Appendix A), the presentations of example questions and comparison questions did not seem to be predictable or become rote to

the subjects. If one knew or inferred the algorithm being used, then it would be possible to infer whether a previous answer was correct by observing the pattern of comparisons given. This did not happen in our sessions. Only in two cases did the students show any sign of thinking about what was going on in the background—in the “tutor’s head” In neither case was this a distraction. One case is given below:

[Two students discussing the book on a flexible board problem (node 8)]

[Student A:] Well, if we’re going to stick by our last answer, I think we’d have to say the board is exerting a force up on the book ... [proceeds to give reasons]

[Student B responds:] You know what they’re going to say to *that* one, don’t you? They’re gonna give you the book on the table example. Then what are you going to say?

Three of the sessions involved pairs of subjects using the tutor. They were asked to discuss their beliefs about the questions and come to an agreement about an answer. These sessions were quite animated. There was a high degree of motivation, verbalization, and serious reflection about the problems. Only rarely did the interviewer need to intervene and ask for verbalization of thoughts or reasons for answers. Here is a sample interaction:

[Two students discuss the impact of the molecular model pre-

vously described to them]

C: Because the table is, uh, not springy.

D But the molecules are, and the table is made of molecules.

C: But, depending on the kind of wood, assuming that it's a stronger wood, the molecules aren't as springy, because they said there were springy molecules ..

D: Not *as* springy, but wouldn't they still be springy, somewhat? They'd have to be.

C: They'd be springy, but not to the weight of a book. Maybe to the weight of a couple of anvils.

D: Um hmm. Maybe not *as* springy to a book, maybe there is a very slight force there ...

C: Yeah.

D: ... giving way, given even how slight it may be, maybe there's still a force there.

In order for the bridging analogies strategy to be effective, students must be motivated to think seriously about the example situations presented. We do not know whether a version of the bridging analogies tutor designed to be used in a stand-alone fashion (without an interviewer present) would be sufficiently engaging for students, but our observations suggest that a stand-alone version may be sufficiently engaging for pairs, or even groups, of students.

Students' comments about the program, elicited at the conclusion of the session, were in general favorable regarding the effectiveness of the learning experience and their enjoyment in using the tutor.

It's a really great program, because you write, you put down what you think your answer is without having any clue, and then you put, you know, if you're confident or not, and then you go back and it keeps going back saying "why, why, why," and it gives you different examples

6 Discussion and Conclusions

The current implementation of the bridging analogies strategy has served well as a research vehicle. Video taped tests showed that the strategy can engage students and bring about significant changes in belief. The tutor was designed to be used as a research vehicle, and this evaluation has given us information concerning what aspects of the current implementation are not flexible or complete enough to act as a stand-alone tutor.

In this section we will first give recommendations, based on the results summarized in the previous section, for extensions of the present study and straightforward improvements to the existing tutor. Then we will discuss longer range possibilities for a more complete re-design of the tutor using artificial intelligence techniques. The knowledge representation and inferencing power of AI technology may provide the leverage needed to design a

robust tutor which uses bridging analogies as its central strategy.

Further research using the bridging analogies tutor

The results of this study have several indications for continuing research on the bridging analogies tutor:

- add more bridges to the network in areas where students needed explanations;
- incorporate one or two levels of hints to be given before the explanation reveals the correct answer to the student;
- construct networks for other topic areas in which to test the strategy;
- conduct further tests with pairs of students;
- test how the introduction of the molecular model near the beginning of the session (it currently is introduced near the end) affects student's beliefs,
- incorporate the reasons observed in students' thinking aloud explanations into multiple choice answers.

Designing the example situation network

An example situation network can be described in two ways: in terms of example difficulty, or in terms of example features. We will discuss each below. Since the final version of the network used was influenced by empirical

results from human tutoring studies, our analysis is post-hoc. In this section we will analyze pedagogically important characteristics of the network and offer some design principles that can guide the design of such networks manually or that could be incorporated into a system which automates the process of choosing or generating appropriate bridges

First we will discuss the network in terms of example difficulty. Traversing the net along the outer edge will touch every example situation, yielding a sequence that can be interpreted as starting with the original anchor situation, and as progressing from easier to harder problems (see figure 1). Each bridge is intended to split the *conceptual distance* between two other situations. The bridging analogies strategy is seen in this light as efficiently searching the space of examples using a divide and conquer approach. The sequence of examples between the current target and the current anchor is divided at the bridge specified by the network. The network thus encodes the pedagogical knowledge of estimated conceptual distance (as opposed to the cardinal distance in a linear sequence of examples, where the third would be half way between the first and fifth).

Though the divided conceptual distance perspective on the example net is valid for the network used here, a feature dimension based perspective is more interesting from an AI viewpoint. Research has uncovered several reasons students give for believing that the table cannot push up on the book, but a hand *can* push up on a book. Each reason involves an attribute

Dimension	Values	Polarity	Definition
solidity	-, +, ++, +++	pos	solidity of the substrate
gravity	true, false	pos	is gravity the most salient force?
salience	-, 0, ++	neg	size of the force involved
motion	true, false	neg	moves visibly when force is applied
volition	true, false	neg	can "decide" to exert a force
mechanism	-, 0, +	neg	its purpose includes pushing or pulling

Figure 6: Proposed feature dimensions for the example network

(or attributes) which distinguishes the two examples. Some of these reasons are: a person is *doing* something, but the table is just in the way, a person's arm can move to adjust to the book's weight, but the table cannot; an arm's purpose is to exert forces, but a table's is not. Thus the student sees one or several features of objects as being relevant to its ability to exert forces, all of which are irrelevant from a physicist's standpoint. The network factors out these possible features by providing example situations with different sets of relevant and irrelevant features. For example, the spring can move and is designed to exert a force, but cannot decide on its own to volition to do so.

We will analyze example situations using a methodology similar to Rissland et al.'s (84) analysis of example cases in case-based reasoning. We distinguish key dimensions along which the example situations differ. The dimensions are shown in Figure 6. These dimensions are pedagogically relevant abstractions over the surface features of the examples. For example, springs, palm-up hands, and flexible boards are all surface features which

map to "movable" in the dimension space. The dimensions have qualitative values as shown in Figure 6. For example, volition has two possible values, true and false; solidity has five: +++ (the road), ++ (a roof-top), + (tables and boards), and - (springs and hands). Each dimension has a polarity which determines whether increasing its value is likely to result in a problem situation which is more difficult or less difficult. Increasing the solidity or gravity dimensions tends to make the problem harder (i.e. the existence of the upward force is less apparent), so they have positive polarity. The remaining dimensions are all of negative polarity.

Our feature dimension analysis of the relationships among the network nodes reveals that the selection of an appropriate bridge may involve some rather complex inferences. No simple feature-based algorithm was found which would account for all of the bridges in the network. Given target and anchor situations, the generation of an appropriate bridge is an under-constrained problem. There exist many potentially applicable bridges. Below we identify several example selection strategies that would account for the bridges in the empirically derived network.

Intermediate examples. The most pervasive strategy is creating a bridge by changing the value of one or more dimensions of the anchor toward the target. For example, the bridge between the book on the table (node 1) and the book in the hand (node 3) is the book on the spring (node 4). This

differs from the anchor by a change in the volition dimension from true to false

Dimension Importance. Deciding which dimension to change may be constrained by assigning an importance or priority to the example dimensions. This importance may reflect how much or how often a dimension contributes to a misconception. For example, for the bridge described above, the target and the anchor differed along the salience, motion, mechanism, and volition dimensions, and only volition was changed in the anchor to make the bridge. It may be that the belief that "no volition implies no force" is the most common misconception. Another possibility is that the volition misconception is the *easiest* to remedy, so it is attempted first.

Constraints on example dimensions A program which automatically generates intermediate examples must be able to decide. 1. *how many* dimensions in the anchor to change, 2. *which* dimension(s) to change, and 3. *how much* to change each by (where the dimension has more than one value that lies between the anchor and target). There exist some constraints on the values a dimension can take which may help with these inferences. A true value on volition implies a true value on mechanism. That is, all things which can decide to exert a force have a mechanism for doing so. For example, the bridge between the book on the table and the book on the spring is the book on a flexible board (node 8). The board differs from the spring in two dimensions, solidity and mechanism, but this can be seen

as a change in the solidity dimension which necessitated the change in the mechanism dimension.

Also, if example situations are being selected from a pre-defined set, then the system is constrained to using combinations of dimension values that are available in the example knowledge base. If examples are being generated on the fly, there will be additional naive physics constraints.

Extreme cases. In situations where either the target or anchor is an extreme case of the other, an example may be chosen which is intermediate along the dimension which is extreme. For example the bridge between many books in the hand (node 2) and a book in the hand (node 3) is two books in the hand (node 12). The target and anchor differ only in the salience dimension, and each has an extreme value in that dimension. The bridge has an intermediate value in the salience dimension. This strategy is similar to the "slippery slope" type of argumentation discussed in Rissland et al. (1984). Another example of using extreme cases occurs when the *bridge* chosen is an extreme case—chosen to focus the student's attention on a particular dimension. For example, the bridge between the book on the flexible board and the book on the spring is many books on a flexible board (node 9). The target and anchor differ only in the solidity dimension, and only by one value. The only change that one could make to bring the anchor closer to the target would yield a value identical to the target. Therefore the

intermediate example method is inapplicable. The student does not notice that a book on a flexible board and a book on a spring are two examples of the same phenomenon. She may not notice (in her own thought experiment) that the board would bend a bit under the weight of the book. In this case a bridge is selected which focuses attention on this fact by giving an extreme case in the salience dimension. This example shows that the student will not always perceive the same feature dimensions in an example situation as the instructional designer. The designer categorized the flexible board as having the motion attribute, while a student may not.

Personal analogies. Another bridge (or anchor) selection strategy noted is encouraging the student to imagine himself in the place of one of the objects and noticing whether he would "feel" a force. Examples are the hand on the flexible board (node 10) and the hand on the spring (node 6).

Microscopic models. As noted in the results section, the introduction of the molecular model of matter (node 11), i.e. that matter is composed of molecules connected by springy bonds, was a critical point for many subjects. This indicates that introducing an explanation at a causal level was important for them. Other studies raise the importance of models in teaching and understanding physical phenomena (deKleer & Brown 80, White & Frederiksen 86, Stevens & Collins 77). The introduction of the hand and the spring examples can be seen as offering a model of springiness with which

the student can view seemingly rigid objects in a new way. These examples provide an explanation for why the table exerts a force—i.e. that it has some finite, though imperceptible, amount of springiness. The microscopic model provides a yet deeper explanation. It explains or gives a model for how rigid objects can be springy. Our use of the term “model” is more limited than the “runable mental models” discussed in deKleer & Brown and elsewhere. The strategy we are proposing here (i.e. using a microscopic model as a bridging analogy) is not a complex mentally runable mechanism or causal chain, but an explanatory model.

Above we have suggested several strategies for the selection of bridging examples. These strategies could also be applied in instructional contexts where the overall strategy is one of generalizing or refining a concept by presenting new examples. In that case new examples build incrementally on previous examples, as compared to bridging analogies where new examples bridge between a target and an anchor.

Using strategies like the ones identified above to select bridges would enhance the flexibility of a computer tutor which used the bridging analogies strategy. Such a tutor would not be constrained to having only one possible bridge between a target and anchor. But as we have seen, defining these strategies is difficult. And the question of when to use which strategy is an open question needing further investigation. Also, using an empirically

tested network of bridges has the advantage of being more reliable. The "intelligence" of an AI inference system for selecting bridges would be limited, so that the system might give spurious or non-optimal examples.⁸

Multiple tutoring strategies

An important area of ITS research is representing tutoring strategies and selecting among multiple strategies (Woolf & McDonald 84, Woolf & Murray 87, Clancey 82, Stevens & Collins 77). Such strategies can be sensitive to students' knowledge state and learning needs (as diagnosed in a pre-test or inferred incrementally with a student modeling mechanism). They can also be sensitive to the pedagogical properties of the topic or task given to the student. Obviously, other strategies are needed for topic areas with characteristics for which the bridging analogies strategy was not intended, such as teaching skills or teaching conceptual knowledge where there are no common anchors. Also, our data indicates that, for some students, alternative strategies are needed to remedy conceptual difficulties in the physics domain we used. Explicitly representing and using the example selection strategies proposed in the last section may benefit some students, but we have little data as yet telling us when to employ these strategies. In addi-

⁸Note however that tutoring expertise is unlike some other domains being examined by AI or cognitive science. There is usually no great risk taken in making a non-optimal inference. Compare a tutor presenting a non-optimal example situation with the more serious error of a doctor prescribing a non-optimal drug.

tion, the focus on analogical thinking and low feedback may be ineffective for some students.

The addition of a student modeling mechanism might enhance the system's performance. Below we outline how such a mechanism might be used to select among alternate strategies. Though our analysis of the protocols is still in progress, we have tentatively identified several types of student behavior that a student modeling system might make inferences from. Some subjects consistently report low confidence levels on their answers, whether correct or incorrect. They may be uneasy with the low feedback nature of the current strategy, or may have only weak intuitions on which to base their answers. For such students one could provide more positive feedback to correct anchor cases. Some subjects self-corrected only after being given explanations. If this pattern is noticed, a microscopic or other explanatory model might be given early on in the session. For students who do not change their answers even after being given an explanation of the scientific viewpoint, the bridging analogies strategy may be inappropriate (for use in the domain in question). Also, for some students the tutor may not be able to find an anchor. In such cases the tutor could switch to a more didactic form of tutoring, or present examples explicitly labeled as positive or negative exemplars of the concept being taught. Students who show a pattern of changing their answers from incorrect to correct with high confidence, without being given explanations, may be best suited to the bridging analogies

strategy. We may be able to infer that they are proficient and confident at using analogies to reason about situations. The depth of bridges (and sub-bridges) a student is given corresponds to the number of incorrect answers she has given in a row without having had a change of mind or being given an correct explanation. The depth of bridging that a student is allowed to be given before receiving an explanation or hint could be limited according to how well the student is suited (as described above) to the bridging analogies strategy.

The example selection strategies proposed in the previous section might benefit from a student model that recorded students' reasons for their answers. This information could be ascertained using natural language interpretations of students' response to the comparison questions (assuming that the AI state of the art allows robust language understanding). Alternatively, the most common reasons given for questions could be identified experimentally and put into a multiple choice form for students to select from after answering a question.

Guidelines for future research

Below we summarize guidelines for future research of this type:

1. Rely on previous cognitive studies of a tutoring strategy.
2. Include knowledge about common misconceptions and their remediation in the tutor.

3. Perform a formative evaluation of the computer tutor, including taped sessions, early on, before large effort is expended in coding a robust tutor.
4. Be explicit about the tutoring strategy used
5. Research the strengths and limitations of a context specific ("strong method") strategy rather than more general or less well-defined strategies.
6. Test context specific strategies in isolation before combining them in one system.
7. Use self-rated confidence measurements to provide additional information about the strength of student answers.

As mentioned previously, our focus on the process of tutorial interaction contrasts with many ITS research efforts which focus on domain task analysis, modeling domain expertise, or designing learning environments. Another comparison involves the fact that the bridging analogies tutor is aimed at changing students' intuitive beliefs and remediating conceptual difficulties, while most existing ITS systems are designed to teach or debug skill knowledge. We foresee other context-specific tutoring strategies being developed to teach science. The bridging analogies strategy uses analogies to extend the locus of applicability of existing intuitions. It is most applicable to instructional contexts where qualitative knowledge is being taught, commonly

held misconceptions exist, and anchoring analogies exists. Other strategies aimed at teaching conceptual knowledge may also be important. Causal model evolution (White and Frederiksen 86) and induction from exemplars (Tennyson 80) are two examples. Learning science requires the acquisition of many types of knowledge. Strategies are also needed to teach factual knowledge, problem solving skills, scientific inquiry skills, and to guide students' exploration of learning environments that provide new types of experiences.

In summary, there is evidence that the strategy works effectively for many students, and that the specific network used was effective (though the data indicates places where it could be improved and extended). We are encouraged by the levels of cognitive involvement exhibited by the students while doing the thought experiments, especially in contrast with the more passive role that students tend to take in traditional explanation oriented methods of teaching, or in computer aided instruction that provides immediate feedback for wrong answers. The formative evaluation provided useful information concerning 1. the improvement of the specific example network used, 2. improving the bridging analogies strategy, and 3. issues in using AI technology to design a more flexible and robust tutor that incorporates the bridging analogies strategy.

We have relied on previous cognitive studies of misconceptions and tutoring strategies in formulating our ideas, and this research exemplifies the importance we place on such studies in the early stages of designing intel-

ligent computer tutors. Further work is needed to codify human tutoring strategies, test their effectiveness in computer learning environments, and determine how to orchestrate the different strategies in computer tutoring sessions.

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APPENDICES

A Program data structures and algorithm

Domain information is stored in text files, making the bridging analogies tutor domain-independent. There are three domain files: the Topic File, the Network File, and the Situation File. The Topic File determines the sequence of topics (each corresponding to one example network) to be presented (this paper discusses only one of the topics), and specifies which of the examples in the topic's network will serve as the original anchor and original target situations.

The Network File contains triplets of numbers, each number representing an example situation node. Each triplet defines a unique bridge between two other nodes, and defines the network as in Figure 2. The table thus defined is searched when the program bridges between a target and an anchor⁹.

The Situation File contains text for the example descriptions, detailed example descriptions, questions, multiple choice answers, correct answers, an explanation for the correct answer, and a pointer to a bitmap picture file. This information is organized using keywords, and is parsed and loaded into PASCAL record structures when the program is executed. These record

⁹"Wild cards" are incorporated, though they were not used in this study. They allow the designer to specify the use of a certain bridge whenever a specified node is the target (or anchor), regardless of the anchor (or target).

structures also keep track of the student answers and confidence ratings for each node.

The bridging analogies strategy is an algorithm for traversing the network. The algorithm has been described operationally in Section 3. It appears in pseudo-code below.

An Algorithm for the Bridging Analogies Strategy

The procedure Teach-Topic is called iteratively for each topic in the Topic File. The Bridge procedure contains the algorithm for traversing the network.

The program is capable of "finding" the original anchor, but this capability was switched off (and the original anchor used is the one specified in the Topic file, as described above) in the test runs we report in this paper. The Find-anchor procedure finds an appropriate original anchor by presenting the student with all the situations analogous to (i.e. linked to) the original anchor in order of increasing simplicity, until the student answers one correctly with high confidence. For large networks this may be more efficient than assuming that the best original anchor is the very simplest example.

Procedure Teach-Topic (original-target, original-anchor)

Describe-and-question(original-target)

Describe-and-question(original-anchor)

Compare-and-allow-change(original-target, original-anchor)

IF anchor wrong or confidence<3

THEN Explain(original-anchor)

IF target is right with confidence>2

THEN RETURN {no misconception}

ELSE Bridge(original-target, original-anchor)

Procedure Bridge (target, anchor)

{The anchor was previously answered correctly with
confidence >2 and the target was previously answered
incorrectly or with confidence <3 }

{1. find the bridge}

Find-a-bridge-between(target, anchor)

IF no bridge exists

THEN Explain(target) AND RETURN

Describe-and-Question(bridge)

{2. establish bridge-to-anchor analogy:}

IF bridge wrong or confidence<4

```

        THEN Compare-and-allow-change(bridge, anchor)

    IF anchor changed to wrong or confidence<3
        THEN Explain(anchor)

    IF bridge wrong or confidence<3
        THEN bridge(bridge, anchor)    {first recursive call}

{3. establish target-to-bridge analogy:}

    Compare-and-allow-change(target, bridge)

    IF target is wrong or confidence<3
        THEN bridge(target, bridge) {second recursive call}

{4. At this point the target should have been answered correctly}

    RETURN

```

Procedure Explain (an-example)

```

{iteratively gives the explanation and re-asks the example's
question until the student answers correctly, or until
given three explanations in a row, in which case the student
is told exactly what to enter as the answer(!)}

```

(Note: Confidence ratings from 1 to 5 are for 'blind guess')

to 'I'm sure' as in Figure 3.)

B Example section of a trace file

Following is part of the computer trace of the session shown in figure 5. All student input is in multiple choice form on the computer. A "!" after a comparison record highlights where a student changed her answer.

START SESSION:

program version: 11/18/86.1

Name: Willard O. Oz

Session ID: 292

Topic: Existence of static normal forces

Original target, Original anchor: 13 0

Time: 11:47:15

....

....

ASK 13 fly on the road

Response: B (not OK) Confidence: 5

ASK 1 book on the table

Response: B (not OK) Confidence: 5

ASK 2 many books in hand

Response: A (OK) Confidence: 5

Comparison: 2 and 1; no change

*BRIDGE: T 13 A 2 B 3 11:50:35

ASK 3 one book in hand

Response: A (OK) Confidence: 5

Comparison: 2 and 1; no change

*BRIDGE: T 1 A 3 B 4 11:50:47

ASK 4 book on spring

Response: B (Not OK) Confidence: 3

Comparison: 4 and 3; no change

*BRIDGE: T 4 A 3 B 5 11:51:17

ASK 5 hand on book on spring

Response: A (OK) Confidence: 2

Comparison: 5 and 3; change 5 ''

ASK 5 hand on book on spring

Response: A (OK) Confidence: 4

Comparison: 5 and 4; change 4 !'

ASK 4 book on spring

Response: A (OK) Confidence: 4

Comparison: 4 and 1; no change

*BRIDGE: T 1 A 4 B 8 11:53:03

ASK 8 book on board

Response: A (OK) Confidence: 4

....

....

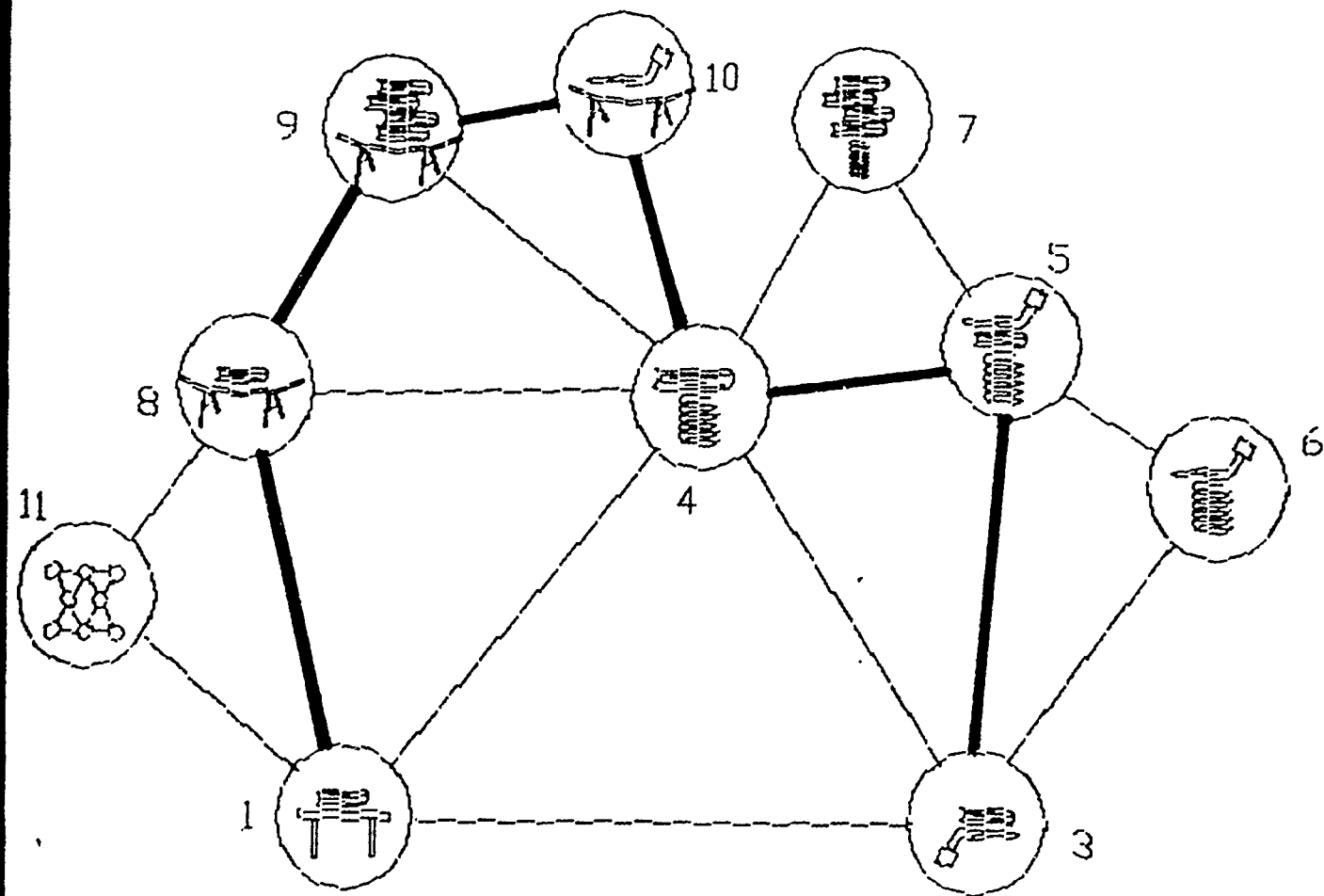


Figure 1: Simplified network of example situations for existence of normal forces

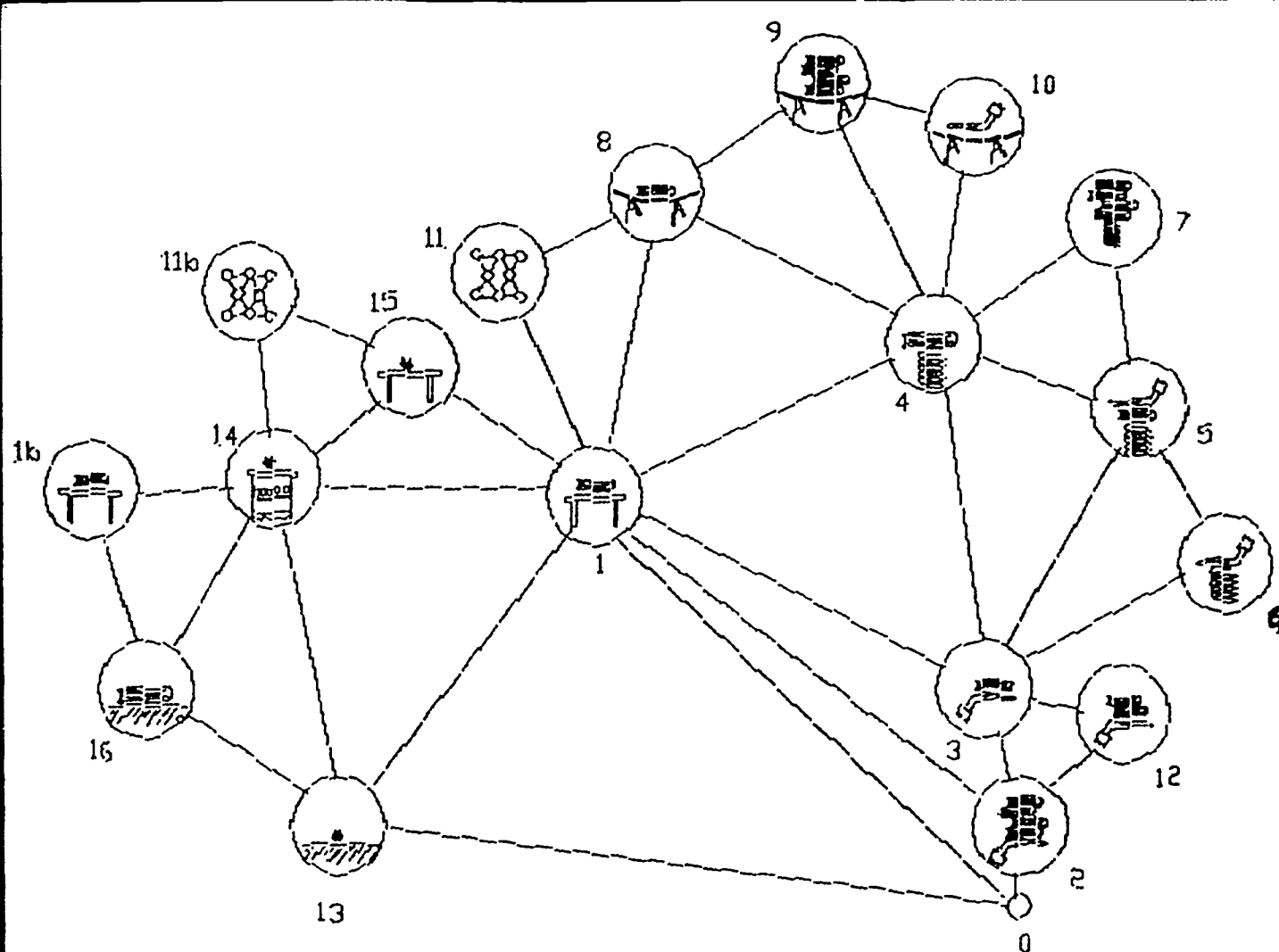


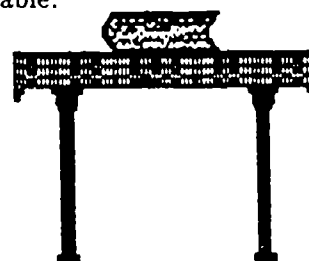
Figure 2: Complete network of example situations

Figure 3: A sample dialogue containing the original target and anchor.

Imagine a medium size textbook resting on a dining room table.¹

While the book is resting there, the table:

- IS exerting a force up on the book
- IS NOT exerting a force up on the book



A book resting on a table

The student chooses "IS NOT ...".

Please rate your confidence in this answer:

- | | | |
|--------------------|----------------------|----------------------|
| *blind guess* | *not very confident* | *somewhat confident* |
| *fairly confident* | *I'm sure I'm right* | |

The student chooses "fairly confident".

Imagine that you are holding a textbook in your hand.

While the book is resting there, your hand:

- IS exerting a force up on the book
- IS NOT exerting a force up on the book



books held in your hand

The student chooses "IS ...".

The confidence question is given again and the student chooses "I'm sure I'm right."

For "a book in your hand" you said:

your hand IS exerting a force up on the book (with high confidence).

¹ After the description of an example situation the student is asked: "Do you want a more detailed description?" in case there is any confusion concerning the brief description given first. We will not show the detailed descriptions here.

But for "the book on the table" you said:
the table IS NOT exerting a force up on the book (with very high confidence).

Explain² why these answers are different.

The student then explains her reasoning to the interviewer.

Do you want to change your mind about:

- a book in your hand
- a book on the table
- both
- neither

The student opts to change "neither" answer and the tutor moves on the present the book on the spring situation.

²If the program were used without an interviewer, the prompt would be changed to:
"Think for a moment about why..."

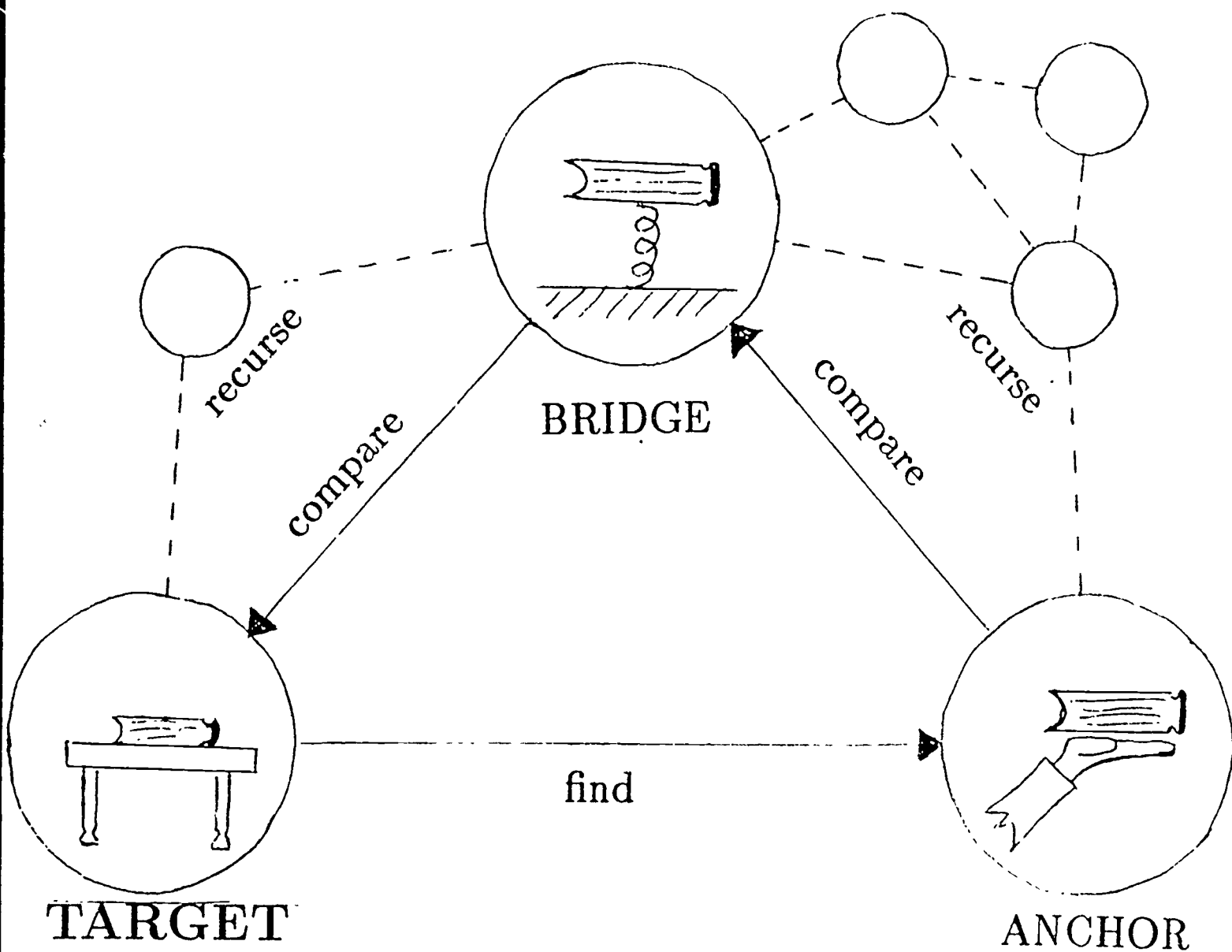
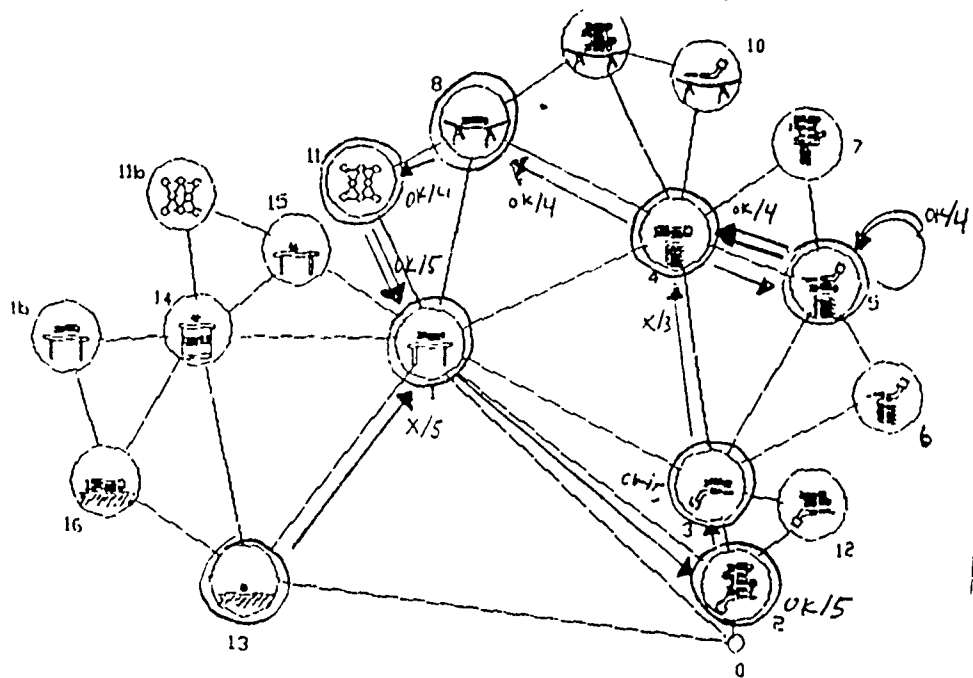


Figure 4: Diagram of the Bridging Analogies Strategy



KEY:

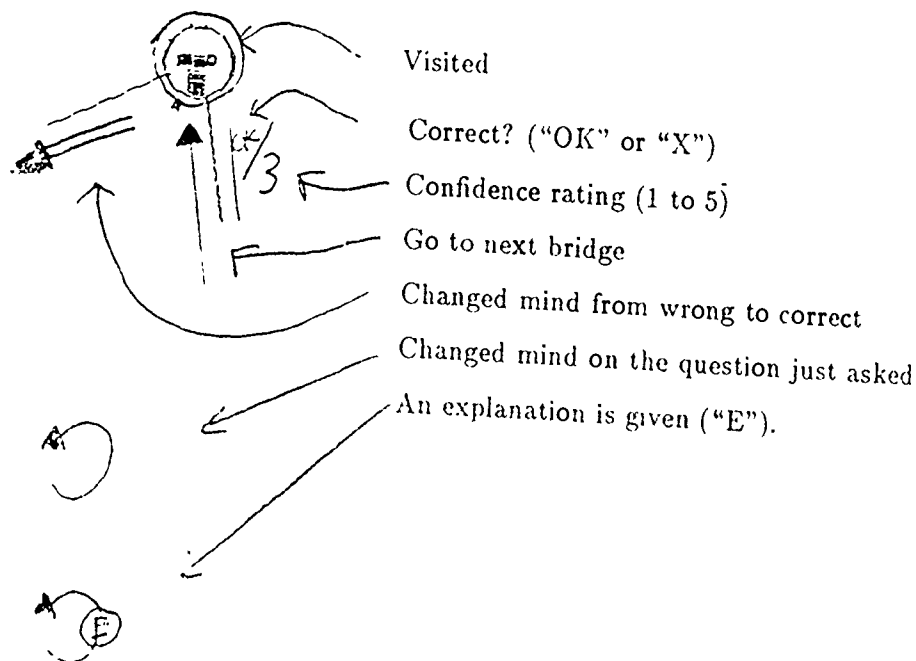


Figure 5: Diagramatic representation of the program trace

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ABSTRACT

This report is a comparative study, conducted in 1986-87 in San Diego, California, of the adaptation of refugee youth from Vietnam, Cambodia, Indochina, and Laos. The project examined both successes and problems of these refugee youth regarding their educational and occupational attainments and aspirations, and evaluated their prospects for economic self-sufficiency in the United States. Data were culled from the Indochinese Health & Adaptation Research Project (IHARP), records of the San Diego City Schools and the San Diego County Probation Department, and intensive interviews with 76 informants. Findings are presented in the following areas: (1) characteristics of San Diego high school students; (2) grade point averages of San Diego high school students; (3) characteristics of Southeast Asian students and their parents; (4) grade point averages of Southeast Asian students; (5) standardized achievement scores: comparative results; (6) determinants of educational attainment: a multivariate analysis; (7) occupational aspirations of Southeast Asian students; (8) problem areas: student dropouts, school suspensions, and juvenile delinquency; (9) adaptive resources: social class and cultural characteristics; (10) adaptive contexts: family, school, and community; and (11) adaptive strategies: acculturation and coping. The strengths and weaknesses of Vietnamese, Khmer, Hmong, and Lao students are analyzed. Data are presented on about 50 figures and tables. Eighty-three references are included. (BJV)

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**THE ADAPTATION OF
SOUTHEAST ASIAN REFUGEE YOUTH:
A COMPARATIVE STUDY**

**Final Report to the
Office of Refugee Resettlement**

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Prepared for the U.S. Department of Health and Human Services, Family Support Administration, Office of Refugee Resettlement, 330 C Street, S.W., Washington, D.C. 20201, under contract #100-86-0214. All opinions and interpretations expressed in this report are solely those of the authors and do not necessarily represent the views of the Office of Refugee Resettlement.

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The work of two SARYS Research Associates was central and indispensable to the entire project. Susan L. Millett assisted us with the preparation of the IHARP-SARYS sample on which much of the study is based, and with the coding and computer entry of much of the quantitative data obtained from the San Diego City Schools; she also painstakingly completed the voluminous transcriptions of the qualitative field interviews we conducted with Vietnamese, Khmer and Hmong youth. Norm I. Borgen was responsible for all of the extensive computer programming work required by the project, and he assisted us in data entry and with the management and processing of a complex data set. We cannot thank them enough for their invaluable help.

Finally, we wish to extend our deep appreciation to the more than 75 Southeast Asian respondents who gave generously of their time--in interviews that sometimes exceeded four hours in length--to share with us their perspectives and personal experiences. We do not acknowledge them by name here only because of our prior commitment to ensure the confidentiality of their responses. Among them we are especially grateful to the 26 young Vietnamese, Khmer and Hmong men and women whose case histories form the heart of our study. We learned much from them--much more than is reflected in the pages that follow--and it is to them that this work is dedicated.

USER'S GUIDE:

Available Volumes of Supplementary Materials:

- I. Case Histories and Qualitative Findings
- II. Appendices of Quantitative Data Tables

The findings and analyses contained in this report are an abridged version of a much larger two-volume manuscript prepared for the Southeast Asian Refugee Youth Study. All quantitative and qualitative materials which have been excluded from this report due to space limitations are available at cost to interested readers. Copies of either or both of those two volumes of supplementary materials may be ordered by writing Professors Rubén G. Rumbaut and Kenji Ima, Department of Sociology, San Diego State University, San Diego, California 92182. The SDSU Sociology Department telephone number is (619) 265-5449.

Available in **Volume I** of the original manuscript are twelve detailed *case histories* of refugee youths -- four Vietnamese, four Khmer, and four Hmong -- plus a much more extensive "Comparative Analysis" chapter based on and referring specifically to the materials in those twelve case histories. These additional *qualitative* materials, which amount to over 100 pages single-spaced, are at the heart of the SARYS investigation and would be of special interest to any reader who wishes to delve more deeply into the comparative sociocultural dynamics of the adaptation of Southeast Asian refugee youths. In many respects, there is much that can be learned from these whole biographical portraits of individual youths that cannot be adequately conveyed either by our quantitative findings or via the analytical summary provided in this more condensed report.

Available as **Volume II** of the larger SARYS report is a set of eleven *appendices* containing many detailed tables of data on both the IHARP-SARYS sample of Southeast Asian students and the much larger sample (N=24,660) of 1986-87 junior and senior students in San Diego high schools. These additional *quantitative* materials, which amount to about 150 pages, will be of interest mainly to researchers and others who wish to delve more deeply into our comparative findings on the educational attainment and occupational aspirations of these students. When occasional references to these appendices are made in the text of this report, the purpose is simply to alert readers to the availability of such additional data bearing on the findings being discussed.

The contents of the additional materials that are not included in the present report, but which are available to interested readers in two separate volumes, are as follows:

Volume I.

QUALITATIVE FINDINGS:

Chapter 6. CASE HISTORIES.

A. Four Vietnamese Case Histories:

- V-1: Van Le
- V-2: Quy Nguyen
- V-3: Xuan Tran
- V-4: Ngoc Truong

B. Four Khmer Case Histories:

- K-1: Bopha Roath
- K-2: Narong Chhay
- K-3: Sok Chhim
- K-4: Sophy Keng

C. Four Hmong Case Histories:

- H-1: Moua Yang
- H-2: Cheng Xiong
- H-3: Boua Cha
- H-4: Deng Vue

Chapter 7. A COMPARATIVE ANALYSIS.**Volume II.****APPENDICES OF DATA TABLES:**

- Appendix A. Characteristics of San Diego High School Students, by Ethnicity.
- Appendix B. Grade Point Averages of San Diego High School Students, by Ethnicity.
- Appendix C. Characteristics of Southeast Asian Students and Their Parents.
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- Appendix E. Correlates of Southeast Asian Students' Grade Point Averages.
- Appendix F. CTBS Achievement Test Scores of San Diego High School Students.
- Appendix G. CTBS Achievement Test Scores of Southeast Asian Students.
- Appendix H. Correlates of Southeast Asian Students' CTBS Achievement Test Scores.
- Appendix I. Predictors of Educational Attainment Outcomes: Zero-Order Correlations.
- Appendix J. Occupational Aspirations of San Diego High School Students.
- Appendix K. Protocol for SARYS Qualitative Interviews with Southeast Asian Youth.

EXECUTIVE SUMMARY

The Southeast Asian Refugee Youth Study (SARYS) is a comparative study of the adaptation of refugee youth from Vietnam, Cambodia and Laos. The project was conducted during 1986-87 in San Diego, California, in order to examine areas of both successes and problems of these refugee youth regarding their educational and occupational attainments and aspirations, and to evaluate their prospects for economic self-sufficiency in the United States.

A. Research Methodology and Sources of Data.

A combination of quantitative and qualitative approaches was used in this research. At the **quantitative** level, the study is comparative in two respects: (1) it compares Southeast Asian students against other ethnic groups in the San Diego area on various indices of educational attainment, occupational aspirations, and problem areas (such as school dropouts and suspensions, and juvenile delinquency); and (2) among Southeast Asians, it compares each of the five major refugee groups (Vietnamese, Chinese-Vietnamese, Lao, Khmer and Hmong) to each other. At the **qualitative** level, the SARYS study conducted field observations and in-depth interviews with three groups of refugee youth: the Vietnamese, the Khmer, and the Hmong. Along the way we also collected additional qualitative data on the Lao and to a lesser extent on Chinese-Vietnamese youth, and we interviewed many Indochinese and American adult informants as well who had experience and expertise in various areas of refugee youth adjustment.

We relied on several data sources: (1) the Indochinese Health & Adaptation Research Project (IHARP); (2) official records from the San Diego City Schools (SDCS); (3) intensive open-ended interviews with Southeast Asian youth and adult informants; and (4) San Diego County Probation Department files. The IHARP data set is comprehensive in scope and longitudinal in design; it is based on simple random samples drawn from an exhaustive enumeration of the universes of Southeast Asian refugee populations residing in San Diego County as of April 1983, and it is probably the most scientifically valid of any sample drawn from Indochinese refugee communities in the United States. For the present study, a unique IHARP-SARYS sample was drawn by identifying all school-age children in IHARP households enrolled in San Diego public schools. Next, from San Diego City Schools (SDCS) we collected complete demographic and academic histories for all students in the IHARP-SARYS sample, including grade point averages and standardized achievement test scores.

Ultimately we were able to collect SDCS data (K-12) on 579 Southeast Asian youth (including Hmong, Khmer, Lao, Chinese-Vietnamese, and Vietnamese male and female students), and these were combined with IHARP records to produce an exceptionally in-depth data base.

Beyond that sample of Southeast Asian students, we collected SDCS data on the educational attainment of the entire 1987-88 junior and senior classes of San Diego high schools (N=24,660), which included 1,485 Indochinese students. Additionally, from San Diego City Schools we also collected information on school suspensions and dropout rates for all student groups, as well as comparative data on the occupational aspirations of high school students. We also conducted field observations and intensive interviews with 26 Southeast Asian youth and over 50 informants knowledgeable of Southeast Asian youth. Finally, data on juvenile delinquency were collected from the Probations Department for refugee youth.

B. Findings.

1. What are the characteristics of Southeast Asian students and their parents?

- As of Fall 1985, the Vietnamese students in the IHARP-SARYS sample had been in the United States the longest (6.2 years), followed by the Hmong, the Chinese-Vietnamese and the Lao (all three groups averaging just over 5 years), and finally the Khmer (4.5 years).
- With respect to the *parental composition* of their homes, most of these students (over 80%) live in intact families in San Diego with both parents at home; about 15% live in single-parent female-headed households, and another 3% in single-parent (or guardian) male-headed households. However, only 49% of the *Khmer* students in our sample lived in intact families with both parents, with 40% living with their mother only (the IHARP study found that almost 1 in 4 Khmer refugee women were widowed), and 11% with their father only -- reflecting the high death rates during the 1975-79 Pol Pot period in Cambodia. By contrast, over 90% of the Vietnamese and Chinese-Vietnamese students lived with both parents, as did about 83% of the Hmong and the Lao. In most of the 17% of the cases where Hmong students lived with their mother only, the mother was widowed; in most of the 17% of the cases where Lao students lived with their mother only, the mother was separated or divorced.
- There is great diversity in the *social class* backgrounds of these students' families. Overall, Vietnamese parents are much more educated, with an average of over 9 years of education, followed by the Chinese-Vietnamese (nearly 7 seven years), then the Khmer and the Lao (each averaging about 5 years), and lastly the Hmong (with a parental average of just above a first

grade education). About 95% of the Vietnamese and Chinese-Vietnamese came from urban backgrounds, as did some 75% of the Lao. Over 50% of the Cambodians, however, came from rural backgrounds, as did about 90% of the Hmong.

- The Vietnamese (both fathers and mothers), who are the most educated and have been in the U.S. the longest, were also much more likely to be employed, followed by the Chinese-Vietnamese. The Lao were more likely to be employed than the Khmer despite roughly equivalent levels of education, reflecting partly the fact that the Lao have been in the U.S. longer than the Khmer, but partly also the fact that far more Khmer parents are widowed mothers on public assistance. The Hmong, finally, reflect the highest levels of unemployment -- as well as the highest levels of poverty and welfare dependency, and by far the largest families. The IHARP study found *poverty rates* of about 90% among Hmong families in San Diego in both 1983 and 1984, compared to poverty rates of about 80% for the Khmer and Lao, of about 70% for the Chinese-Vietnamese, and of over 50% for the Vietnamese. Their children attending San Diego schools are, by and large, children of poverty.

- The IHARP study found rates of clinically significant psychological distress among these Indochinese adults that were over four times greater than those among American adults, and the levels of depressive symptomatology among the Cambodians were significantly higher than the levels observed for any other group. The Khmer as a whole, and Khmer mothers particularly, exhibit the highest levels of depression (and for the Khmer, IHARP longitudinal data suggest that the depressive symptoms are chronic, not merely transient mood or affective disorders), followed by the Hmong and the Lao, and lastly by the Chinese-Vietnamese and the Vietnamese. Overall, mothers are significantly more depressed than fathers, except for the Hmong, where levels of depression are identical for both fathers and mothers.

- Fully two-thirds (67.7%) of the Indochinese students in the Junior and Senior cohorts were classified as LEP (Limited-English-Proficient), in contrast to 28.2% of Hispanics.

2. How well are they doing in school?

- Valedictorians and Salutatorians -- in area high schools in 1986, 10.9% of graduating seniors were Southeast Asian students. *Of the Valedictorians, 12.1% were Vietnamese (N=4); and among the Salutatorians, 50% were also Vietnamese (N=7). Altogether, of the combined Valedictorians and Salutatorians (N=47), 23.4% were Vietnamese (N=11).* There were no Cambodian, Hmong or Lao students among these. Thus, the 23.4% of the Vietnamese honor students represented more than twice the proportion of all Indochinese seniors in these high

schools (10.9%), and, counting only Vietnamese students, probably more than three times their proportion among the graduating seniors.

- Immigrants and refugees to the U.S. -- whether from Asia, Europe, or Latin America -- are systematically outperforming all native-born American students in GPAs despite initial (or even persisting) English language handicaps.
- In general, Southeast Asian youth have above average GPAs, exceeding white majority students as well as all other ethnic minority students with the exception of a small group of East Asians (Chinese, Japanese and Korean students).
- Among the Southeast Asian students, the Vietnamese had the highest GPAs, followed by the Chinese-Vietnamese, Hmong, Khmer and Lao. The Khmer and the Lao were below the GPA average among white majority students; the Vietnamese and Chinese-Vietnamese were well above that average; and remarkably -- and contrary to expectations -- Hmong student GPAs were *above* the white majority student average.
- Southeast Asian students have above-average nationally-standardized *math* test scores, in essentially the same GPA rank order, except that the Khmer rank last in math scores.
- They have below average standardized *verbal* test scores, again in essentially the same group order, except that the Hmong end up last in the reading-vocabulary subtest.
- It should be underscored that those academically at-risk youth are frequently frustrated with their bilingual and academic programs -- programs which have not, for the most part, adequately addressed their needs.

3. What factors are associated with their levels of academic achievement?

- Social class resources -- the educational level of parents makes an important difference, but it is not the sole or even main determinant. The same considerations apply with respect to the current employment and income levels of the parents.
- Cultural resources -- VCH (Vietnamese, Chinese and Hmong) cultures reflect higher levels of discipline and orientation towards education than LK (Lao and Khmer) cultures; the VCH are more likely than the LK to have collective solutions to problems via their extended families.
- Mother's characteristics -- both the *mother's* socioeconomic and emotional characteristics, but not the father's, are highly associated with student performance; e.g., mothers who are

more educated have children who perform better in school, and mothers with higher levels of depression are more likely to have children whose academic performance is poorer.

- Gender -- except for the Hmong, females have better GPAs than males in all ethnic groups. This is explained by patrilineal and patriarchal norms that tend to devalue females among the Hmong -- and which generate pressures that undermine the possibility of Hmong girls' transition into post-secondary schooling, despite their clearly evident talent.

- Length of stay in the U.S. -- all other things being equal, the longer their stay in this country, the more likely they are to do well academically.

- Age -- younger refugee students are doing better than older youth.

- Those refugee youth who arrive in the United States in their teens (post-puberty) and with little previous education have great difficulties adjusting to a high school placement system which is age-based. These students are extremely frustrated over not receiving comprehensible instruction. Instead, they withdraw from what seems to them an impossible task of simultaneously learning high school material while learning English. This is all the more difficult for older students who were illiterate in their own native language.

- Intact families -- those with intact families are more likely to do well, especially those in families with two-wage-earner parents.

- Cultural values of parents -- parents with more "ethnic resilience" (i.e., who strongly maintain ethnic pride and cultural identity, and who do not fully assimilate to American norms) have children who perform better than those with parents who are more "Americanized."

4. What do they see in their occupational futures?

- Occupational aspirations -- VCH groups seek higher-status jobs and LK groups seek lower-status jobs. VCH occupational selections tend to concentrate on math- and science-based professions. Their selection is influenced by the educational attainment of the students (e.g., Vietnamese are most likely to go into math-based fields), by the occupational experiences of their parents (e.g., some Hmong are more likely to picture public safety jobs than the other refugee groups), and by the cultural values of their parents (e.g., the Khmer are more likely to pick human service occupations than the Vietnamese or the Hmong).

- A common current weakness of Southeast Asian students is their narrow conception of the range of occupations and career alternatives, causing them to foreclose prematurely on their job

possibilities. In addition, their current approach to learning is based on rote skills at the expense of critical thinking and communication skills: their deficiencies in both of these latter areas will limit their future job placement and advancement.

- Image of the future varies -- Vietnamese youth have a longer future time perspective than do the Hmong, Lao and Khmer youth.

5. Do they stay in school?

- Southeast Asian students as a whole are more likely to stay in school (K-12) than most other non-Southeast Asian groups -- except for the Khmer, who are among the *most* likely to drop out of school. The Khmer dropout rate is close to the traditionally high Hispanic dropout rate; the Hmong are the *least* likely to drop out among all student groups in the city.
- Beyond high school, the Vietnamese are the most likely to continue with schooling. Hmong students who do well at the K-12 level do *not*, in large part, go on to post-secondary schooling. This may pose a serious problem for Hmong self-sufficiency prospects.

6. Do they experience conflict with other groups at school?

- Overall the Southeast Asian students have low levels of school suspensions, but when they are suspended, it is generally in response to racial baiting by non-Asian students.
- The Vietnamese and Lao students are most likely to react to racial baiting, resulting in their higher rates of suspension for fighting; by contrast, the Khmer and Hmong have the lowest rates of suspensions in San Diego City Schools.

7. Do they get into trouble with the law in their adjustment?

- Overall, Southeast Asian refugee youth have lower levels of contact with law enforcement agencies than do other groups of juveniles.
- Among the refugees, the Vietnamese and Lao are much more likely to be involved with the juvenile justice system, whereas very few Khmer or Hmong youth are ever arrested by police.
- The Southeast Asian delinquents are almost all males, in contrast to non-Southeast Asians.
- Delinquent Southeast Asians are much more likely to be parentless youths than non-delinquents.

- They are more likely to be involved collectively with other youths in violations of the law than are non-refugee delinquent youth.

8. What barriers do they experience in school and in seeking work?

- Family instability -- among parentless Vietnamese youth, among Khmer youth from broken families and with parents who remain depressed, and among Lao youths coming from families which have lost control over their children.
- Early marriage and childbearing and restrictive parenting among the Hmong, resulting in fewer females and males going onto post-secondary schooling and higher prospects of welfare dependency for those who fail to make that transition to post-secondary education.
- The emotional consequences of the Pol Pot period among the Khmer undermine the ability of their parents to parent, and increase the chances of school dropouts and poor performance.
- Lack of access to and knowledge of jobs and careers, lack of role models, and economic constraints that frustrate the achievement of educational and occupational goals, especially among the Hmong and Khmer.
- Racism -- particularly at the 7-12 grade levels, name-calling and physical confrontations prevail, resulting in suspensions and "gang-like" responses. This reflects racist attitudes against Asians in general and Indochinese refugees in particular. The current racism against Indochinese refugee students is not only pervasive, but its consequences act as barriers to their educational success. The experiences of refugee students with racial baiting and conflict, especially at the junior high and early senior high school levels, interfere with academic concerns and (especially among those who are already vulnerable and troubled, such as parentless minors) increase their motivation toward joining gangs for self-protection and toward non-academically oriented activities.
- Continuing low levels of English language skills, at least commensurate with grade level, among many Southeast Asian students -- especially those who arrived in their teens.
- Counter-productive survival strategies among some of the Hmong, Khmer and Lao, as detailed in the "comparative analysis" chapter of the report.
- Among many, lack of bicultural strategies and troubles juxtaposing cultures.

C. General Evaluation: Strengths and Weaknesses of the Refugee Groups

We are above all impressed with the strength and ingenuity of these young refugees who, despite their many handicaps and in a remarkably short period of time, have been able to make exceptional progress in American schools and establish themselves as potentially productive contributors to their adoptive society. For the most part, in assessing the prospects for economic self-sufficiency even of those whose parents remain dependent on public assistance, we would ask the question "when" not "if" they will leave the welfare system. We have every evidence -- both quantitative and qualitative -- to expect that the future occupational and economic situation of Southeast Asian youth will be much improved over that of their parents, and indeed that they will be able to contribute much to their parents and families as well as to the communities where they are rebuilding their lives.

The Vietnamese: Among all the Indochinese groups, the Vietnamese are the best positioned to succeed and become self-sufficient. On all academic measures, the Vietnamese and Chinese-Vietnamese are among the top students in area high schools. In San Diego, almost one in four of the Valedictorians and Salutatorians among graduating students were Vietnamese -- even though the Vietnamese constituted only about 7% of the graduating seniors in those high schools. They have very high GPAs, solid math achievement scores (ranking in the top quintile nationally), improving language proficiency scores, a high rate of admissions to colleges and universities, and high visibility at the graduate and professional school level. Underlying that success is their families' continuing belief in and support of education as a vehicle for upward mobility, their sophistication in dealing with educational institutions and, most impressively, their ability to develop collective strategies of resource-pooling and general support networks based on tightly-knit extended family organizations.

Among their main problem areas we have identified the following. First, Vietnamese youth without intact or functional families are less likely to be academically successful, more likely to get into trouble with school and police officials, and also more likely to drop out of school. Secondly, some Vietnamese who continue into post-secondary education do so with English language deficiencies which are inadequately addressed by both school officials and the students themselves. Even though many will receive advanced education, given their single-mindedness in acquiring a technical degree in computer science, engineering or allied areas, their continuing deficiency in English may set a limit to their opportunities and to their value to employers.

The Khmer: Despite the prevalence of emotional trauma in their community, their relatively low levels of pre-migration education and their difficulties with English, Khmer students in San Diego high schools have roughly equivalent GPAs as the average American-born student. They exhibit a service orientation, an expressiveness and a likable style of interaction with Americans that surpasses that of other Southeast Asian students. This expressiveness is also positively associated with their ability to benefit from counseling and therapy. Notwithstanding their generally poor language performance to date, their optimism and even enthusiasm is infectious. They are less ethnocentric than the other groups, more open to American culture and more reluctant to reject it.

The degree of family disorganization (as reflected in a very high proportion of widowed, mother-child households) and the emotional trauma resulting from the Pol Pot period will continue to affect individuals in this group, including their ability to achieve self-sufficiency quickly. These withdrawal tendencies are reflected in the generally lowered occupational aspirations of Khmer high school students and in their high school dropout rates, which are not only above school district norms but significantly higher than for any of the other Southeast Asian groups. In both of these problem areas -- mental health needs and high school dropouts -- effective programmatic interventions, focused not solely on Khmer youths themselves but on their parents and on the wider refugee community, may hold the promise of greatest long-term positive results for this population.

The Hmong: Given the predominantly rural, preliterate backgrounds of most Hmong parents -- characterized by little or no formal education and few transferable occupational skills -- it was remarkable to find that Hmong students are earning higher GPAs than majority white students and all ethnic minorities except some Asian-Americans in San Diego public schools. In addition, they had good school attendance, the lowest rate of school dropouts in the city, solid math achievement test scores (putting them near the top quartile nationally), and very low indicators of juvenile deviance (hardly any Hmong are suspended from school or arrested for juvenile delinquency) -- in short, a general profile of youths without apparent troubles. The continuity of Hmong social organizations seems to generate great discipline and surprisingly high educational performance through the secondary school level. That there is talent and potential in this community is very clear from our data.

The same source of strength is also a source of Hmong weakness in adapting to the United States setting. The insistence on strong social controls in the context of a patriarchal, patrilineal, and patrilocal kinship system in which girls are subordinated and devalued, in conjunction with very large families and a continuing desire to produce many children despite

their generally dismal economic situation at present, explains in large part what one of our respondents perceptively called "*a tragic waste of talent.*" Not only does early marriage and childbearing affect their economic self-sufficiency prospects, but the insistence on patrilineality and the associated devaluing of female children further undermines an educational investment in their daughters, thus adding to the economic burden on already very poor households. All of this in turn frustrates the possibility even for talented and motivated Hmong girls of going to college and fulfilling their high occupational aspirations, and at the same time it increases the likelihood of early marriage and childbearing.

The Lao: Although their parents do not have the least education among all refugees, Lao students were found to have the lowest GPAs of all the Southeast Asian groups, the least ambitious occupational aspirations, and (at about the same proportions as the Vietnamese) the highest rates of school suspensions and juvenile delinquency. The higher levels of Lao juvenile deviance seem in part to be linked not only to looser parental social controls and childrearing practices but also to the behavior reportedly exemplified by some Lao adults, including a relative preoccupation with recreational values and concerns.

Lao youths nonetheless have better GPAs than many American ethnic-racial minorities, and they also reflect above-average standardized test scores, especially in mathematics computation. Some Lao students, especially those with more highly educated parents, are doing very well in area schools -- suggesting that there is considerable diversity within the Lao group. Like the Khmer, with whom they share many sociocultural elements, the Lao appear to have an open, accommodative stance in their acculturative process. Moreover, unlike the Khmer, the Lao have a much lower school dropout rate -- a rate that is also lower than the San Diego school district norms -- and they do not suffer the same level of emotional trauma or family disruption that is apparent among the Khmer survivors of the Pol Pot period. Nevertheless, in the totality of the evidence we have collected there is reason to be concerned about the Lao's trajectory toward economic self-sufficiency, and to invite follow-up systematic research to identify those problem areas most amenable to effective intervention.

Chapter 1.

INTRODUCTION.

The Southeast Asian Refugee Youth Study (SARYS) is a local community study of the adaptation of Southeast Asian refugee youth. The project was conducted during 1986-87 in San Diego, California, funded by a research contract from the U.S. Office of Refugee Resettlement (ORR). Its aim was to examine areas of both successes and problems of these refugee youth regarding their educational and occupational attainments and aspirations, and to evaluate their prospects for economic self-sufficiency. To this end, a wide range of both qualitative and quantitative data from a variety of sources and samples was collected and analyzed, and the results of this work are presented in this report.

While many quantitative findings on the comparative educational and occupational adaptation of Southeast Asian students will be detailed in what follows, at the heart of the SARYS study is a series of intensive, in-depth qualitative interviews with a sample of Vietnamese, Khmer and Hmong refugee youth. These respondents are members of what we will call the **"1.5" generation**: that is, they are neither part of the "first" generation of their parents, the responsible adults who were formed in the homeland, who made the fateful decision to leave it and to flee as refugees to an uncertain exile in the United States, and who are thus defined by the consequences of that decision and by the need to justify it; nor are these youths part of the "second" generation of children who are born in the U.S., and for whom the "homeland" mainly exists as a representation consisting of parental memories and memorabilia, even though their ethnicity may remain well defined. Rather, the refugee youths in our study constitute a distinctive cohort: they are those young people who were born in their countries of origin but formed in the U.S. (that is, they are completing their education in the U.S. during the key formative periods of adolescence and early adulthood); they were not the main protagonists of the decision to leave and hence are less beholden to their parents' attitudes (e.g., they may be "freer" and more "objective" to forge a new **modus vivendi** in the U.S. with less of the pressure for self-justification required of the "first" generation); and they are in many ways marginal to both the new and old worlds, for while they straddle both worlds they are in some profound sense fully part of neither of them. Though they differ greatly from each other in cultural and social class origins, and in many other respects as well, they generally share a common psychohistorical location in terms of their age and their migration status/role, and in terms of developing bicultural strategies of response and adjustment to that unique

position which they occupy as "1.5'ers"--in the interstices, as it were, of two societies and cultures, between the first and second generation, between being "refugees" and being "ethnics" (or "hyphenated Americans").

A. The Problem and the Project.

The Refugee Act of 1980 sets as the primary goal of the Federal resettlement program the "achievement of self-sufficiency as quickly as possible" for refugees admitted to the U.S., the vast majority of whom have come from Southeast Asia in recent years. In response to that goal, programmatic efforts have focused on the placement of adults in regular employment. Among the various Southeast Asian refugee groups, the Vietnamese, who have been here the longest on average, have been the most successful in establishing economic "self-sufficiency." Others, primarily the Khmer and Hmong, have yet to match the same level of self-sufficiency. In San Diego County, the IHARP (Indochinese Health & Adaptation Research Project) panel study recently found that just over one-sixth of "first wave" (pre-1978) Indochinese refugees were welfare dependent, while fully two-thirds of the "second wave" (post-1978) Southeast Asian families were dependent on public assistance (Rumbaut, 1985b, 1986, 1988 in press). The more numerous second cohort does not seem likely to duplicate the successful transition of the first cohort of 1975 refugees, as suggested by various "human capital" indices -- i.e., they are more likely to come from rural settings, less likely to be literate, less likely to know English, and less likely to bring occupational skills transferable to the U.S. job market. The second cohort also generally underwent more traumatic migration experiences and arrived in the U.S. during more difficult economic times, all of which has exacerbated the difficulties of their social and psychological adjustment (Rumbaut, 1985a). In general, these more recently arrived (and much more diverse and numerous) Southeast Asian refugee adults seem significantly less prepared to acculturate and assimilate into the American mainstream of work and self-sufficiency, and their current levels of poverty and welfare dependency are much higher than those of other refugees.

As they adapt to the U.S. economy and society, one factor that has both advantages and disadvantages for these Southeast Asian refugees is that they typically have large and youthful families (Rumbaut and Weeks, 1986; Ima et al., 1983). On the one hand, tightly-knit families are a source of great strength: extensive kinship systems founded on traditional values of filial piety and familial obligation provide the refugees with much-needed social and economic

support as they attempt to cope with the extraordinarily stressful demands of their resettlement. On the other hand, the refugees' meager resources are further depleted by the need to provide for large families with many dependent children. Though, hopefully, most of these adults will enter some form of work after a period of transition, their prospects for economic well-being may in part depend upon pooled-income strategies, including the contributions of extended family members as well as the earnings of wife, husband and **children**. Observations of the first cohort indicate that even this group relies on multiple incomes, including contributions of children. Still, very little research is available on the roles of refugee youth in Southeast Asian self-sufficiency (see Bach and Carroll-Seguin, 1986; Baker and North, 1984; Caplan et al., 1985; Haines, 1985, 1988 in press; Simon, 1983; Skinner and Hendricks, 1979).

ORR data indicate that approximately 40 percent of the more than 800,000 Southeast Asian refugees admitted to the U.S. since 1975 are between the ages of 6 and 21. These estimates actually undercount the predominance of youth and children because they do not reflect the estimated natural increase of this population, amounting to approximately 200,000 American-born Southeast Asians over the past decade (Rumbaut and Weeks, 1986). Currently, we estimate that half of all Southeast Asians in the U.S. are under 18 years of age. The presence of so many school-age children is being felt most noticeably in the school systems of those U.S. communities where sizeable numbers of Southeast Asian newcomers have been resettled. These facts on the youthful character of this population suggest that the future, and more specifically the near-term future, of these refugee groups will be increasingly dependent on the role of youth, and on the nature of their educational and occupational adaptation. Recent ORR annual survey data indicate that, in refugee households receiving both public assistance and wages, 28 percent of the wage earners are between 16 and 24 years old -- equal to the percent above age 35. Though heads of households comprise 39 percent of these wage earners, children were as likely to be wage earners as spouses and almost half as likely to be wage earners as the household heads themselves.

It thus seems clear that strategies for refugee economic self-sufficiency will rest significantly in the near future with what we called earlier the "**one and a half**" generation (those who were born in Southeast Asia but educated in the United States), and later on with the **second** generation (those who are born and educated here). Assuming that these generations will contribute to the support of their families, we are confronted with questions on their preparedness to seek education and jobs in the American context. Thus, a shift in programmatic efforts to gain a greater understanding of the role of the youth in the current and

future economic adjustment of refugee families is not only natural but timely: doing such research now will provide a better basis for long-term planning.

Additionally, according to refugee service providers, there is concern that some refugee adults may become part of a "lost" generation who may never achieve self-sufficiency no matter what level of support services they receive. Within this context, the longer term prospect of incorporating children as part of a broader family self-sufficiency strategy provides a more balanced view of refugee adjustment. Indeed, recent discussions on the utility of using individuals or families as units of analysis in understanding socioeconomic stratification lend support to using the family as the theoretically preferred unit of analysis (Curtis, 1986; Haines, 1982). While some may raise questions about the creation of a second generation of welfare-dependent populations, resembling some of the American underclass of families with histories of two or more generations of welfare dependency, it is our feeling, shared with many social service providers, that most children of Southeast Asian refugees will enter gainful employment and avoid the welfare dependency syndrome. Assuming the validity of this projection, we wonder what kinds of policies will not only insure this transition out of welfare but also create measures that will shorten the time from dependency to independence. The answers are not immediately obvious.

For example, given the data documenting the current importance of refugee youth as potential contributors to household incomes, will their participation in the labor force be a short-term solution but pose a long-term problem? Studies of Samoans (e.g., Shu 1985-6) indicate that kinship obligations encourage children to enter the labor market at an early age, thereby lowering their level of educational achievement and ultimately preventing Samoan youngsters from advancing beyond low-status or dead-end occupations. If this occurs among the refugees, will it ultimately hinder their achievement of self-sufficiency as it has affected Samoans? When we see the entrance of refugee youth into the labor market, this and other questions emerge. Studies of the Samoan experience highlight the cultural factor but fail to identify the structural conditions which Samoans face. Although recent studies of Southeast Asian youths indicate that they are unlikely to emulate the Samoans, based both on their proclivity to enter post-secondary institutions (e.g., Bach and Carroll-Seguin, 1986) and a contrasting kinship system supportive of educational pursuits (e.g., Simon, 1983), most of those conclusions are based on Vietnamese-dominated samples. Given the diversity of Southeast Asians, one must be cautious about overgeneralizing. Any balanced view of the refugees will have to take into account the varieties both of cultural dispositions and of structural conditions. In the last analysis, transcending the polemic debate between those who

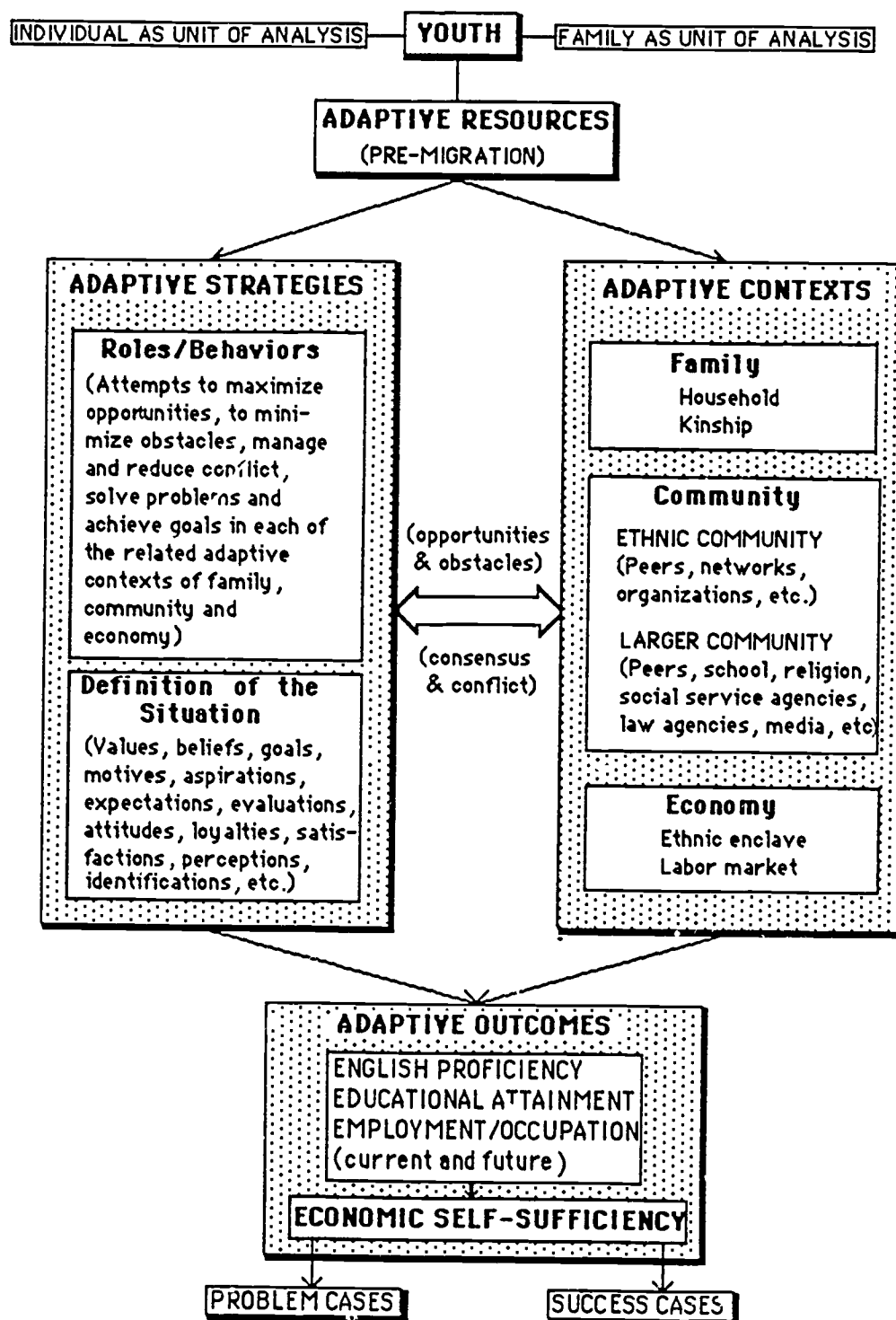
emphasize the cultural capital hypothesis versus those who emphasize structural conditions, the transition into economic self-sufficiency will depend on the nature of the interaction between the refugees and their adjustment contexts (cf. Ng, 1977; Swidler, 1986).

The present study (SARYS) aims to explore that interaction, mindful of its programmatic significance for public policy. We begin by asking these basic orienting questions: (1) Along a continuum of adaptive processes and outcomes (e.g., with respect to their educational achievement and occupational aspirations), who are the "successful" refugee youth? Who are the "unsuccessful" refugee youth? (2) What are the similarities and dissimilarities between them? (3) Which factors/processes differentiate these types of youths? (4) Which of those factors/processes are "givens" (and hence not amenable to programmatic interventions) and which can be altered by intervention efforts? Moving beyond those basic questions toward an analytic framework, we have identified four key sets of parameters, as depicted in our general model of refugee youth adaptation (see Figure 1-1):

- (1) **Adaptive Resources:** What are the pre-migration personal and family characteristics of refugee youth? How are they related to their prospects for self-sufficiency? What are the principal differences among the various ethnocultural groups in this refugee population?
- (2) **Adaptive Contexts:** What are their institutional and situational contexts of family, community, and economy? How are they related to each other? What adaptive challenges, obstacles and opportunities do these pose for refugee youth?
- (3) **Adaptive Strategies:** What current and future roles/strategies/plans do they have/anticipate/desire regarding family, community, school and the world of work? How do they define themselves in relation to those institutions?
- (4) **Adaptive Outcomes:** Given their resources, roles, definitions of the situation, and institutional contexts, what are their prospects for developing English language proficiency, attaining educational goals, and finding employment? The general model sketched in Figure 1-1 summarizes these interrelated concerns and guides our approach to the SARYS study.

Our main emphasis in this report is on the adaptive viewpoints and strategies of Southeast Asian youth, rather than adults, as they apply to their current and future roles as family/kin members, as students, and as workers. We conceptualize these strategies as ongoing attempts to minimize obstacles, maximize opportunities, reduce conflict, enhance consensus, solve problems and achieve goals in the search for educational and occupational attainment. Given the complexity and extensiveness of the analytical framework, we do not propose here to

Figure 1-1.
ADAPTATION OF INDOCHINESE YOUTH: GENERAL MODEL



exhaustively answer all of the questions implied by it. We want to know the youths' experiences, goals, strategies, expectations, and values related to their attempts to gain education and to find careers in the work world. Within this process, we also want to discover how they view themselves as members of families and other collectives (e.g., their ethnic group, American society) vis-a-vis themselves as separate individuals. In this process of associating/disassociating themselves with parents, kin and other co-ethnics, what are the long-term prospects for mutual support? Will they develop the long-sought-after social insurance network for themselves and their parents, or will they leave their parents and family behind? It has been suggested that more than likely they will either maintain close extended ties within the same or nearby households, or else something akin to a modified extended family system (see Haines, 1982), but these speculations await empirical validation. The ethnographic materials in this report will address these and other questions.

The qualitative field methods employed in this study help to detail and flesh out the processes of refugee youth adjustment, going beyond the statistical associations/correlations of large-scale survey data. Such survey data are of course important, and we will rely to some extent ourselves on such data in this report, but they leave many unanswered questions. In effect, our research permits the opportunity to investigate the "Black boxes" created by quantitative survey data; e.g., the connection between family background and the pursuit of education is mediated by socialization, transfer of resources, and the like (Hurn, 1985). What are the processes (decision-making, culturally-patterned coping strategies) used by Southeast Asian youth? The availability of the IHARP longitudinal data base for San Diego County, as well as extensive data we obtained from the San Diego City Schools and the San Diego County Probation Department -- all of which are described in Chapter 2, "Methodology" -- provide us with important clues to follow up on, and with a quantitative context for locating qualitative interview data and ethnographic observations of Indochinese refugee youth. In effect, the two approaches are complementary and have been fruitfully combined in the SARYS project: they jointly yield greater knowledge and understanding of the **whys** and the **hows** of refugee adjustment in the United States.

B. Southeast Asian Youth in California and San Diego Schools

Nowhere is the impact of Southeast Asian youth more evident than in California, where an estimated 40% of all Southeast Asian refugees in the United States have resettled. Over the

past few years there has been a remarkable increase in the enrollment of minority language students of Indochinese origin in California public schools (grades K-12), as documented by recent state-wide data released by the California State Department of Education. In the five years between 1981 and 1986, enrollments doubled from 55,542 Indochinese students in 1981 to 109,727 students by Spring 1986. It is anticipated that these numbers will continue to grow significantly for the foreseeable future. The study of the educational adaptation of these groups thus addresses not only an issue of concern for national refugee policy but one with considerable practical significance at the state and local levels.

Figure 1-2 breaks down the 1986 Indochinese enrollment figure of 109,727 students by ethnic group. About two-thirds of these students are Vietnamese (51,701) or Chinese-Vietnamese (an estimated 19,381); the remaining one-third consists of Cambodian (16,630), Lao (11,289) and Hmong (10,716) students -- figures that roughly reflect the proportions of these groups generally in the refugee population. Difficulties with the English language are typical and perhaps the principal problem faced by these young newcomers in American schools. Of the total 1986 Indochinese enrollment, 77,055 students (or 70%) were classified as "Limited English Proficient" (or LEP), and the remainder as "Fluent English Proficient" (or FEP). As Figure 1-3 shows, the proportion of LEP students varies by ethnic group: 59% of the Vietnamese were classified as LEP, compared to 76% of the Chinese, 79% of the Lao, 82% of the Hmong, and 84% of the Cambodians (who are also the most recently arrived). [Data on the Chinese-Vietnamese are less precise, but it is estimated that about 75% of LEP Cantonese-speaking students in California schools are of Indochinese origin.] These data generally reflect both the social class backgrounds of these groups and the fact that most of these refugee youth are "second wave" arrivals who have been in the United States for less than five years, compared to "first wave" (mostly Vietnamese) students who have now resided in the United States for a decade.

San Diego -- the site for the SARYS study -- ranks fourth among metropolitan areas in the United States in the size of its Indochinese population (the other three, also in California, are Los Angeles, Orange, and Santa Clara Counties). In 1983, the IHARP study systematically enumerated this population in San Diego County and estimated it to number nearly 40,000 persons, distributed as follows: 17,133 Vietnamese, 4,686 Chinese-Vietnamese, 8,155 Lao, 5,103 Khmer (Cambodian), and 4,784 Hmong (Rumbaut, 1985b; Rumbaut and Weeks, 1986). This population has continued to grow significantly since 1983 for all groups except for the Hmong, whose numbers (though still sizeable) have declined locally as a result of a major movement of Hmong clans north to the Central Valley of California.

Figure 1-2.

Indochinese Student Enrollments in California Schools, 1986
(State Department of Education Census, N=109,727)

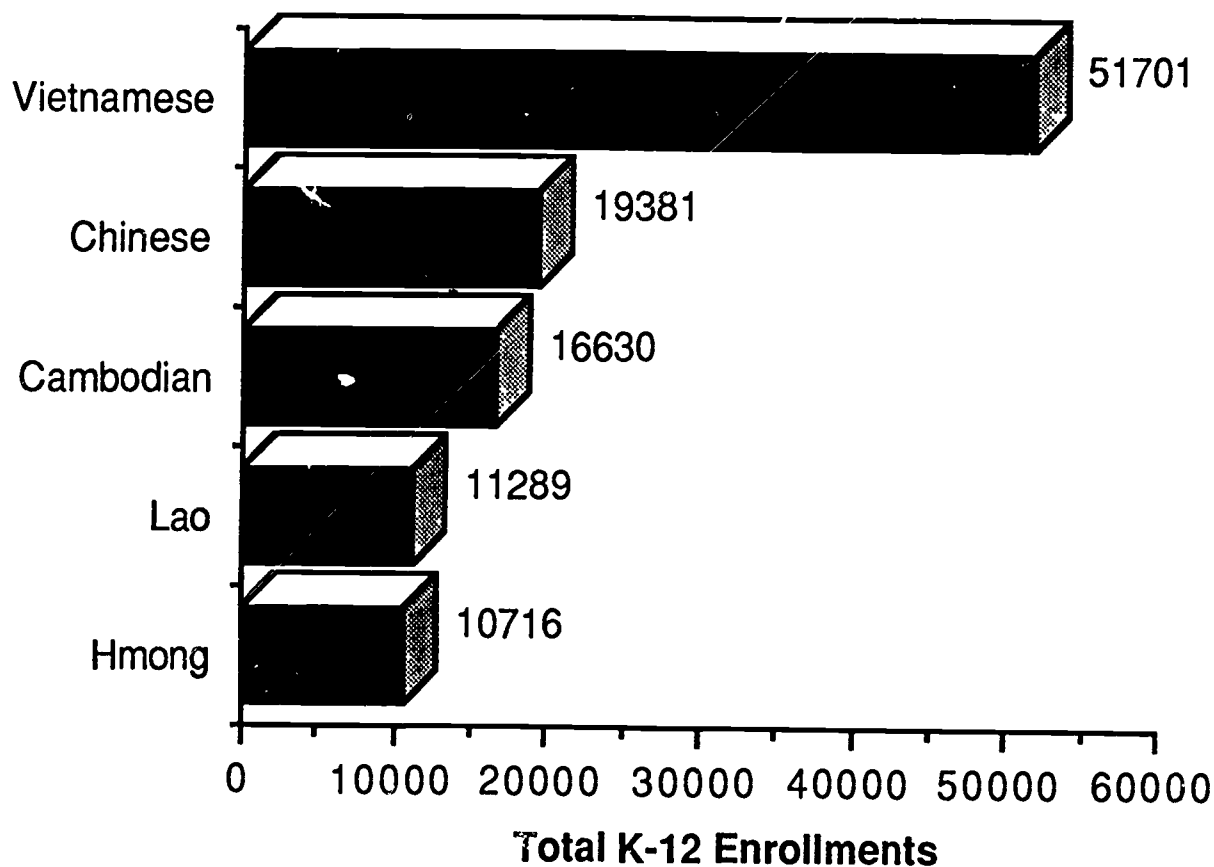


Figure 1-3.

**Indochinese Student Enrollments in California Schools, 1986
By Ethnicity and English Proficiency Level (LEP v. FEP)**

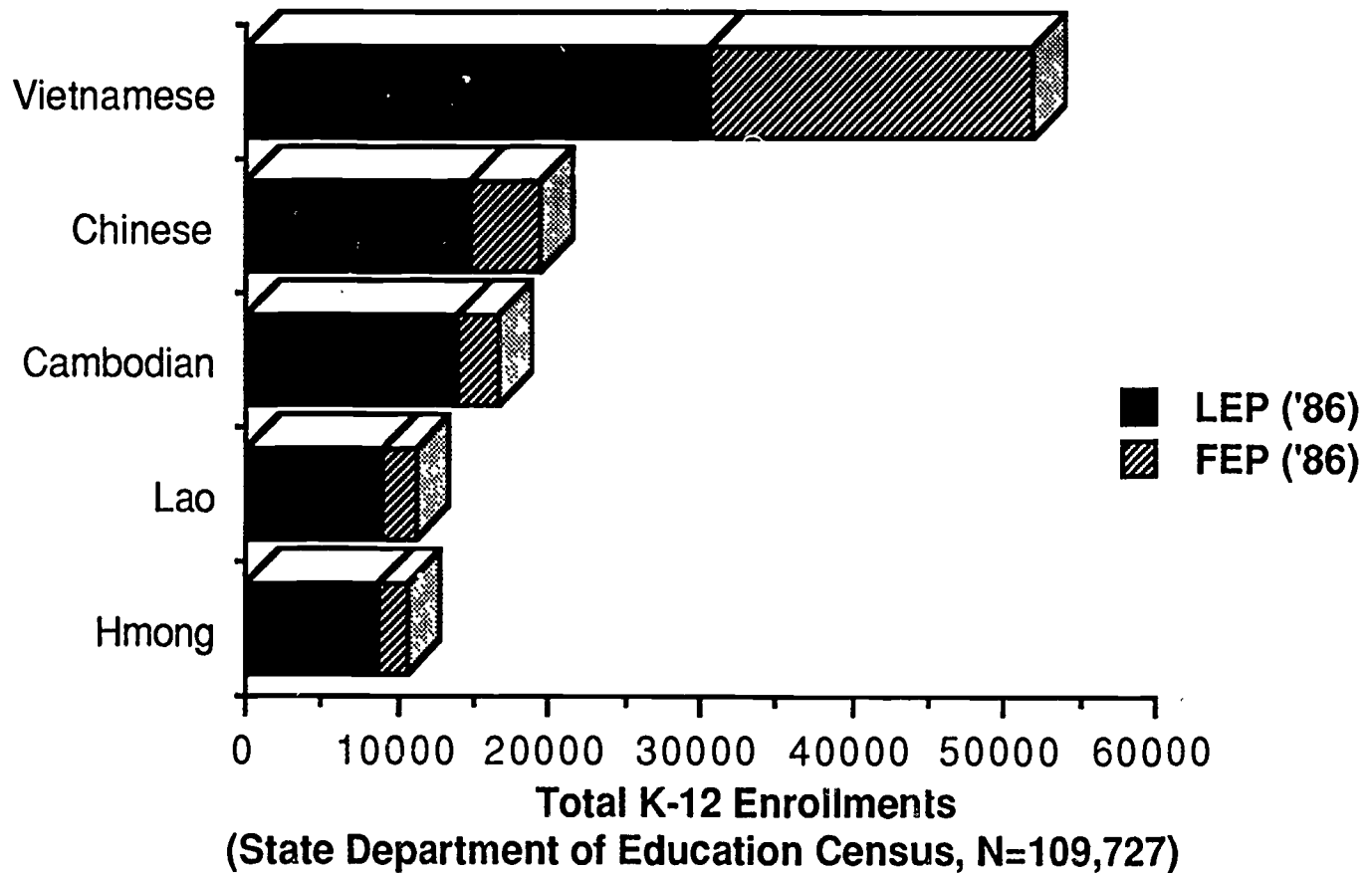
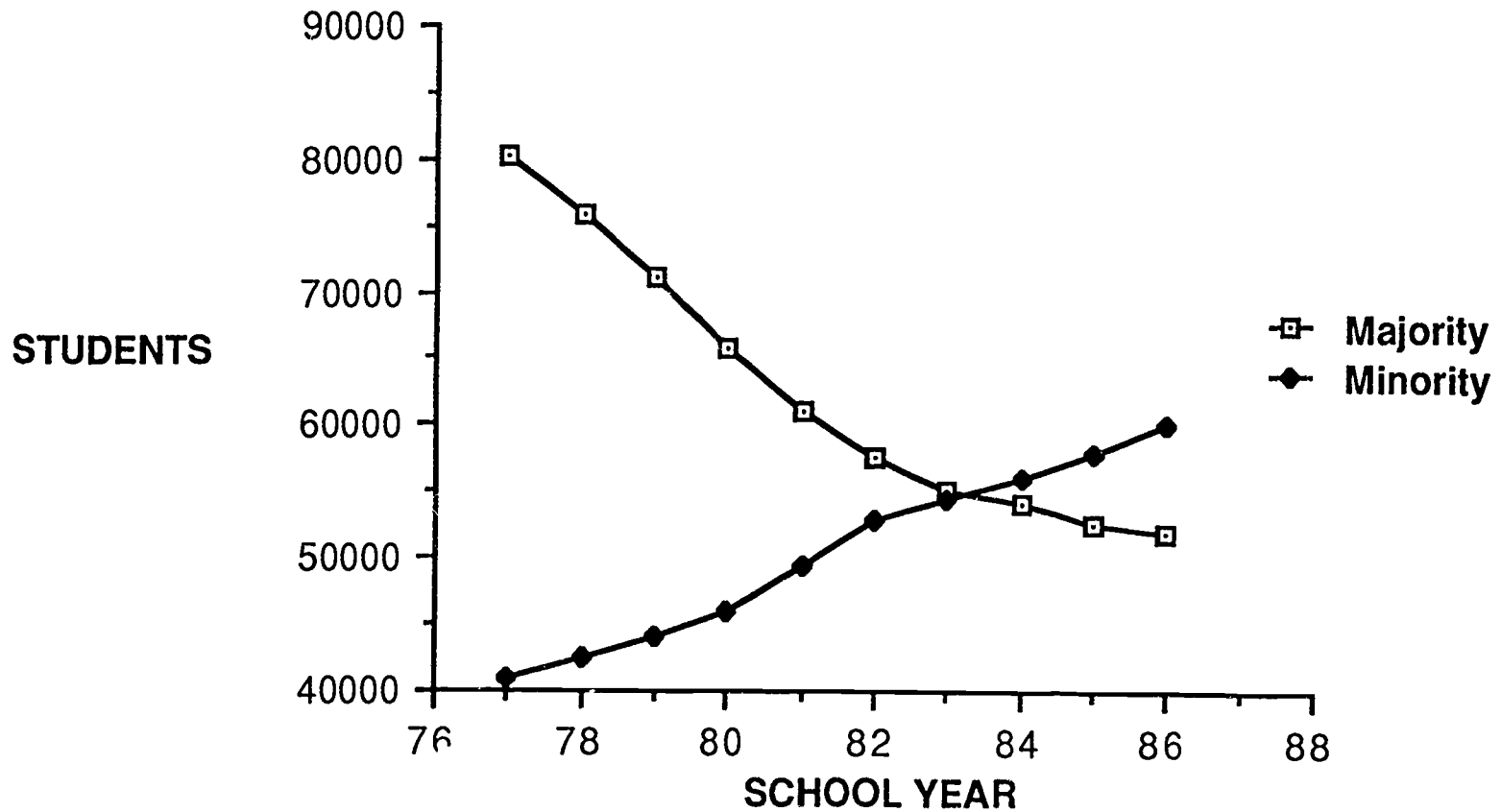


Figure 1-4.

Ethnic Census of K-12 Students in San Diego City Schools School District Totals, 1976-77 through 1985-86



The rapid increase of the refugee population in the local community has particularly impacted the San Diego City Schools (SDCS). That impact is vividly shown in Figure 1-4, which shows the dramatic drop of "majority" students (i.e., non-Hispanic whites) in contrast to the dramatic increase in the proportion of "minority" students over the past decade. By 1984, for the first time in San Diego history, SDCS schools contained more minority students than majority students; and a significant proportion of those minority students, particularly after 1980, has consisted of Southeast Asian students.

More specifically, in 1986 there were 116,055 students enrolled in San Diego City Schools: 65,921 at the elementary school level, 16,811 in junior high schools, and 33,323 in senior high school. Of the total, 46.2% were non-Hispanic whites, 20.4% were Hispanics (predominantly Chicanos and Mexican immigrants), 16% were Blacks, and 17.4% were classified as "Asian/Others" (a total of 20,194 students). Of this last group, about 40% were Indochinese, 40% Filipinos, and the remaining 20% included a wide range of other Asians (Chinese, Japanese, Korean) and Pacific Islanders. Asians constituted the fastest growing segment of the student population, doubling in less than five years from 8.5% of all students in 1982 to over 17.4% in 1986; and Indochinese students constituted the fastest growing group among all Asians. In 1986, there were over 8,000 K-12 students in the San Diego City Schools, accounting for over 7% of total enrollments. This large size of the Indochinese and the ethnic diversity of the SDCS student population make the analysis of SDCS data on educational attainment especially valuable for purposes of comparative analysis and for the goals of the SARYS study -- and we will turn to such an analysis in Chapter 3 of this report. But these rapid changes in the ethnocultural composition of the schools also signal the need to reevaluate the appropriateness of traditional counseling and of instructional knowledge, methods and programs. The findings and issues addressed in this report may thus have practical implications as well for educational policy-makers.

C. A Survey of Valedictorians and Salutatorians in San Diego.

Given the widespread media attention that has been given to notices of extraordinary scholastic achievement by Southeast Asian refugee students in U.S. schools, it may be of interest to report at the outset the results of a local survey of Valedictorians and Salutatorians among San Diego's Class of '86. Information was obtained by SARYS for all seniors who

graduated in June 1986 from all high schools in San Diego County. We will focus here on findings for schools within the city of San Diego, since it is here that the Indochinese population is concentrated.

There are 17 high schools in the San Diego Unified School District. Of these, six have either no Southeast Asian students at all or enrollments that are less than 1%, so these will be excluded for the purposes of this report. Of the remaining 11 high schools, there were a total of 4,312 graduating seniors in June 1986. Of these seniors, 468 were Indochinese: that is, 10.9% of the graduating Class of '86 among these 11 high schools were Vietnamese, Lao, Hmong or Cambodian students. There were a total of 33 Valedictorians and 14 Salutatorians among the 4,312 graduating seniors. **Of the Valedictorians, 12.1% were Vietnamese (N=4); and among the Salutatorians, 50% were also Vietnamese (N=7).** Altogether, of the combined Valedictorians and Salutatorians (N=47), 23.4% were Vietnamese (N=11). There were no Cambodian, Hmong or Lao students among these. Thus, the 23.4% of the Vietnamese honor students represented more than twice the proportion of all Indochinese seniors in these high schools (10.9%), and, counting only Vietnamese students, probably more than three times their proportion among the graduating seniors.

These data certainly support the general picture of substantial educational progress and academic achievement among Vietnamese students. These data do not tell us, of course, much about the ethnic distribution of educational attainment within the highly heterogeneous Indochinese population, nor can they explain the actual process or principal predictors of educational success among these Southeast Asian groups. One of the features of the SARYS project, however, included our ability to link the comprehensive IHARP data set (encompassing random samples of all Southeast Asian households in San Diego) with San Diego City School data on the educational attainment of all school-age children in those IHARP households--including their grade point averages (GPAs), standardized achievement test scores, and complete academic histories since enrollment. This allowed us to test specific models to identify the predictors of educational success--and educational failure--among these refugee youth, while controlling for a wide variety of variables. For example, among the data available in the IHARP data set are variables such as length of time in the U.S., former education and occupation of the students' parents, levels of English proficiency, family composition, the nature of their migration and resettlement histories, current economic situation of the students' families, parental expectations and aspirations regarding their children's education, and a variety of other cultural, psychological and related measures of adaptation--all

of which may be associated with educational outcomes. Multivariate analyses of these quantitative data will be presented in Chapter 3 to estimate the independent effect of different predictor variables on achievement outcomes.

D. Organization of the Report.

The report is organized as follows. **Chapter 2** presents an overview of the samples and sources of both quantitative and qualitative data in the SARYS study. Here we include a summary of the process of qualitative interviews completed with a sample of Hmong, Khmer and Vietnamese refugee youth, and with a larger and diverse group of adult informants. The rest of the report is divided in two parts: quantitative findings are presented and analyzed in Chapters 3 to 5, and qualitative analyses and conclusions follow in Chapters 6 and 7.

In **Chapter 3** we focus on comparative findings on educational attainment from various sources of quantitative data, including data obtained from the San Diego Unified School District and from the Indochinese Health & Adaptation Research Project (IHARP) at San Diego State University. These findings address: the educational attainment of all Indochinese v. non-Indochinese 12th grade students in San Diego city high schools, as measured by their cumulative grade point averages--followed by an analysis of both GPAs and standardized achievement test scores for an IHARP-SARYS random sample that allows us not only to identify and compare the attainment patterns of all major Indochinese ethnic groups (Chinese-Vietnamese, Hmong, Khmer, Lao, and Vietnamese), but also to carry out multivariate analyses of a wide range of predictors of student academic performance. **Chapter 4** examines comparative data on the occupational aspirations of Indochinese v. non-Indochinese students in city high schools. This is then followed in **Chapter 5** by an analysis of evidence in three areas of problems in refugee youth adjustment: within the school system, we examine comparative data both on student dropouts and on school suspensions of Indochinese v. non-Indochinese students in city schools; outside the school context, we provide findings on the prevalence, characteristics and patterns of juvenile delinquency among refugee youth who have been arrested by San Diego police and processed through the County Probations Department.

Chapter 6 provides a comparative qualitative analysis, going beyond case histories to incorporate other qualitative materials, field notes and interview data. Here the focus is on pre-migration social class and cultural characteristics of the various refugee groups from Vietnam,

Laos and Cambodia; on the adaptive contexts of family, school and community; and on problems of acculturation and culturally-patterned coping strategies. Finally, Chapter 7 concludes with a summary comparing the strengths and weaknesses we have observed in each of the groups examined. Hopefully this discussion can provide a clearer perspective from which to evaluate the future prospects of this generation of Southeast Asian refugee youth.

Chapter 2.

METHODOLOGY.

The SARYS research project is based on a combination of quantitative and qualitative approaches to the comparative study of Southeast Asian refugee youth. At the quantitative level, the study is comparative in two respects: first, it compares Southeast Asian students against other ethnic groups in the San Diego area (including Filipinos, other Asians and Pacific Islanders, Blacks, Hispanics, non-Hispanic whites, and other immigrant groups, primarily Iranians and Arabs) on various indices of educational attainment, occupational aspirations, and problem areas; second, among Southeast Asians it compares each of the major refugee groups (Vietnamese, Chinese, Lao, Khmer, Hmong) to each other. At the qualitative level, the SARYS study was limited to an in-depth examination of three groups of refugee youth: the Vietnamese, the Khmer, and the Hmong. Along the way we also collected (in an incidental rather than systematic way) additional qualitative data on the Lao and to a lesser extent on Chinese-Vietnamese youth. These two latter groups are significant for a variety of reasons that will become apparent throughout the report, and certainly merit further study. Figure 2-1 summarizes the various samples and sources of both quantitative and qualitative data employed in the SARYS study. Each of these is briefly discussed below.

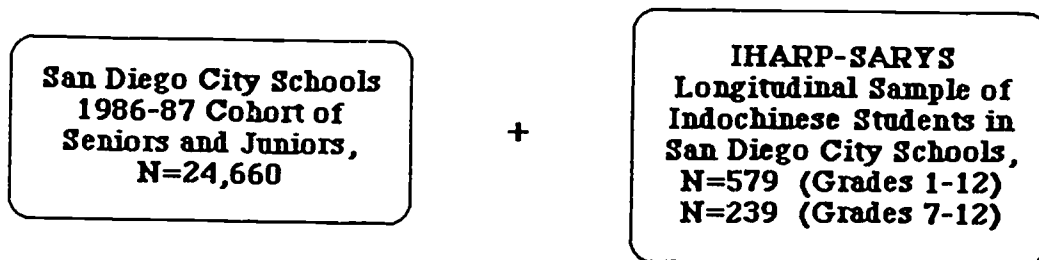
A. Samples and Sources of Quantitative Data.

For comparative analyses of the educational attainment and occupational aspirations of students, we relied on two main data sources of quantitative data: (1) official records from the San Diego City Schools (SDCS) on school enrollments, academic performance, and students' career choices; and (2) the comprehensive, longitudinal data set from the Indochinese Health & Adaptation Research Project (IHARP), which included complete pre-migration, migration and resettlement histories for random samples of men, women, adolescents and children from all major Indochinese ethnic groups. [The IHARP study had been carried out in San Diego County during 1982-85, supported by a \$750,000 grant from the National Institute for Child Health and Human Development.] In addition, for the analysis of problem areas, we obtained official data on student dropouts and suspensions from the San Diego City Schools. We also collected and coded data from the official records of all Indochinese juvenile delinquents in the

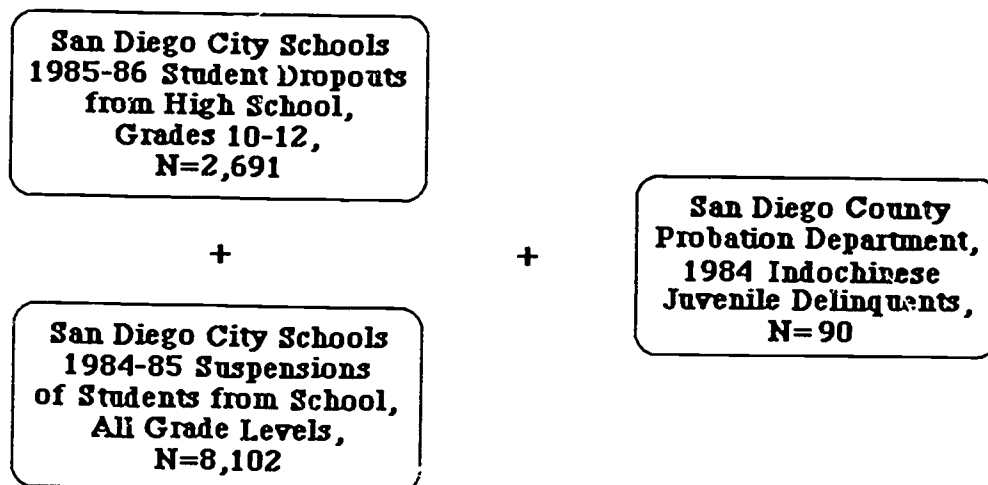
Figure 2-1.

SOUTHEAST ASIAN REFUGEE YOUTH STUDY (SARYS)
Samples and Sources of Quantitative and Qualitative Data

I. Quantitative Analyses of Educational Attainment and Occupational Aspirations:



II. Quantitative Analyses of Problem Areas:



III. Qualitative Analyses:



San Diego County Probations Department for 1984 (N=90, each with 1 to 5 arrests), and these quantitative data will be reviewed in Chapter 5. The specific ethnicity of the juveniles was coded by the investigators on the basis of surname and related data in the Probation records, after reviewing each of the several thousand juvenile case files for calendar year 1984.

The SDCS data are particularly valuable, and include the following: (1) demographic and educational performance data on all students in the 1986-87 cohorts of seniors and juniors (N=24,660); (2) additional data on student career choices collected through a special SDCS career guidance program for a subsample of 1986-87 juniors who completed that process (N=6,890); (3) demographic data for all 1985-86 SDCS high school students who dropped out of school from grades 10-12 (N=2,691); and (4) official SDCS data on all 1984-85 suspensions of students from school at all grade levels, including basic demographic information, and reason for and length of suspension (N=8,102).

An important limitation of these data for our purposes is that the SDCS does not collect specific data on ethnicity for each of the major Southeast Asian ethnic groups; instead, it classifies all such students under a single category of "Indochinese." Moreover, for some purposes (e.g., in official reports on student dropout rates), the SDCS may also lump all the Indochinese under the single rubric of "Asians." However, we were able in most cases to ascertain the specific ethnicity of the refugee students in one of two ways: either through analyses of the primary home language, a datum coded elsewhere in SDCS files for all LEP [Limited English proficient] students--an entry-level classification which covers most of the Southeast Asians, with the only ones not covered being a small group of most probably first-wave Vietnamese--although even here it is not possible to differentiate precisely between Chinese-Vietnamese and Vietnamese students, since an unknown number of ethnic Chinese who speak Vietnamese will be listed as Vietnamese; or alternatively, by coding case-by-case the ethnicity of the students on the basis of their surnames and given names, following procedures earlier used successfully in the IHARP study with the assistance of co-ethnic consultants (although again, this method cannot differentiate reliably between Chinese-Vietnamese and Vietnamese individuals). The latter procedure was followed by the investigators to code precisely the ethnicity of Southeast Asian students in both the dropout and suspension files. In any case, partly because of this limitation, we rely principally on the IHARP-SARYS random sample (rather than on the SDCS records) for precise analyses that differentiate between Vietnamese, Chinese-Vietnamese, Lao, Hmong and Khmer--since the ethnicity and subethnicity of all respondents in the IHARP study was specifically known.

THE IHARP-SARYS SAMPLE

The IHARP data set is comprehensive in scope and longitudinal in design, and (of particular importance to the SARYS project) it is based on simple random samples drawn from an exhaustive enumeration of the universes of Vietnamese, Chinese-Vietnamese, Lao, Khmer and Hmong populations residing in San Diego County as of April 1983. As such, the IHARP data represent the most complete enumeration of any large community of Indochinese refugees in the United States (estimated at 40,000 as of 1983) and the sample drawn from the IHARP enumeration in San Diego County (including basic demographic information on N=3,003 persons residing in 437 households) is probably the most scientifically valid of any sample drawn from Indochinese refugee communities in the United States. Structured interviews were conducted with a total of 739 adults covering a wide range of variables involved in their migration and resettlement histories at two points in time: in mid-1983 (T1) and again a year later in mid-1984 (T2). These interviews were conducted by trained indigenous interviewers in the home and language of the respondent, averaging about three hours in duration. Additionally, in-depth qualitative interviews were also conducted between the two main surveys (at "T1.5") with a subsample of up to 10 persons from each ethnic group, which were audiotaped, translated and transcribed, and which provide a rich complement of qualitative information to the quantitative data collected. (See also Rumbaut, 1985a, 1986, 1988 in press; Rumbaut and Weeks, 1986.)

The IHARP data set did not include objective measures of the educational attainment of school-age Indochinese children, such as GPAs and standardized achievement test scores. However, we went to the original IHARP household listings and identified (by name, address, telephone number, age, gender, parents' names and family relationship) all Indochinese youth who were of school age (ages 6 to 18) as of 1983, and added to this list younger children who would have reached school age by 1986. Next, under a collaborative arrangement previously established with the San Diego City Schools, we followed up each such listing to determine if that youth was enrolled, or had at any time in the previous three years been enrolled, in any school (K-12) within the San Diego Unified School District. If so, we collected complete demographic and academic histories for each such student--including transcripts of all courses ever taken, grades received, and scores attained for all standardized achievement tests taken (usually once per academic year). Since some "first wave" refugee students had enrolled in San Diego City Schools as early as the 1975-76 academic year, some records obtained contain longitudinal data on educational attainment that span as many as 10 or 11 years. Ultimately,

following this painstaking procedure, we were able to collect SDCS data (K-12) on a sample of 579 Indochinese youth--including Hmong, Khmer, Lao, Chinese-Vietnamese, and Vietnamese male and female students. [Of these, much of our focus in the chapters that follow will on the subsample of students in grades 7 to 12 ($N=239$), since the most useful and reliable data on educational attainment and occupational aspirations are available only for secondary rather than elementary level students.] These data are probably representative of school-age Indochinese refugee children who arrived in the U.S. at any time between 1975 and early 1983. The resulting sample ($N=579$; grades 7-12 subsample, $N=239$) forms what we will refer to as the **IHARP-SARYS sample**.

Since the IHARP sample covered all of San Diego County, some Indochinese youth in our listings resided outside the San Diego city limits and therefore would generally be attending school in another school district in the county; no SDCS records, of course, would be available for such students. However, it turns out that some 84% of the Indochinese population of San Diego County lives within the city of San Diego, so that the great majority of families with school-age children live within the San Diego Unified School District. Beyond this, we were concerned about any possible sample attrition that might be created if some families had moved out of San Diego during the past 2 or 3 years--but this possibility in fact posed no significant problem, since the SDCS maintains a student's file on computer disk (i.e., accessible to inspection) for a 3-year period, and thus even in such cases we were still able to retrieve complete longitudinal data on that student's academic performance for all the years the student was previously enrolled in any city school in grades K to 12, up until the year of departure. Finally, the IHARP random sample includes, of course, families with no school-age children, as well as single people, elderly widows, and couples without children. All such households would not be reflected in the IHARP-SARYS sample.

In order to compare the characteristics of SARYS vs. non-SARYS Indochinese adults, families or households in the IHARP data set, we ran a series of breakdowns of key demographic, socioeconomic, psychological and other variables, and performed one-way analyses of variance on the differences between means. The results indicate the following:

* One-third of the respondents in the original T1 IHARP sample had no school-age children, and one in six has children but not in the San Diego Unified School District. Half (49.1%) did have children in the city schools (about 60% of the Hmong, vs. 45% for each of the other groups), and so they entered the IHARP-SARYS sample.

* The adults (parents) in the SARYS subsample were significantly ($p < .001$) older than the non-SARYS adults (40 years vs. 34 years), less educated (5.1 vs. 7.1 years of pre-migration education--partly reflecting the relatively greater proportion of Hmong parents in the SARYS group), less English proficient, less likely to be employed, more welfare-dependent, poorer, and residing in larger households (7.9 vs. 6.4 persons) with, as would be expected, greater numbers of children under 18 (4.6 to 2.8 children per household at T1). There were no differences in length of residence in the United States, or in our measures of cultural values or psychological well-being.

* In short, SARYS families are characteristic of recently arrived, larger refugee families with dependent children who are attending city (rather than suburban) schools, and who are less educated and less occupationally and economically successful in the U.S. than non-SARYS refugees, who may be younger, more educated, less responsible for child-raising, and hence more likely to be employed and economically self-sufficient. This in turn should be kept in mind when interpreting the results of the data on the educational attainment of refugee youth in SARYS families--and indeed, make the results all the more remarkable, as we will see below.

B. Samples and Sources of Qualitative Data.

The systematic qualitative portion of the SARYS study was based on intensive interviews with two samples: one a sample of 26 Southeast Asian refugee youth, and the other a sample of 52 adult informants (both Americans and Southeast Asians) with specialized knowledge about these youth. These interviews often provided us with an opportunity to raise questions with these respondents concerning some of the preliminary (and sometimes surprising and unexpected) quantitative findings we were developing from our analyses of the SDCS and IHARP-SARYS data, and in the process deepen our insights about the "black box" dynamics of refugee youth adjustment. Conversely, the interviews sometimes provided us with "clues" to follow up in the analysis of the available quantitative data. In addition, this was supplemented by the ongoing ethnographic work and field observation which the two investigators have been separately carrying out for the past several years in the local refugee communities.

One central source of information for the SARYS study involved in-depth interviews with a carefully selected sample of Southeast Asian youth, which were conducted (in English) by the

two co-investigators. A total of 26 youths were formally interviewed during the project: 12 Vietnamese, 9 Khmer, and 5 Hmong. These were selected to reflect a broad range of characteristics, circumstances, difficulties and accomplishments; in particular we sought to diversify the sample in terms of age, gender, ethnicity, wave of arrival, and adaptive successes and problems. Although some of them had been in the U.S. for only three years, their spoken English was understandable and adequate for the purposes of the interviews. The respondents ranged in age from 18 to 26 years at the time of the interviews, and they ranged in age from 6 to 17 years at the time they left the homeland; 12 arrived in the U.S. pre-puberty, and 14 arrived post-puberty. This youth sample contained approximately equal numbers of males (N=14) and females (N=12). Twelve of them came to the U.S. as part of the "first wave" of migration, and the other 14 arrived in the U.S. after 1978, with some arriving as recently as 1984. In some cases, they spent several years in refugee camps overseas before being resettled in the U.S. These youths represent a socially diverse group as well as a wide range of adaptive "successes" and "problems." Most came with their parents and families, but a few came without their natural parents. Some were single, some married, a rare few already separated or divorced; most were without children, but some had as many as two children at the time of the interview. Some of these young respondents were still living with their parents or guardians, others were on their own already; some were about to graduate from high school, others were enrolled in college, some were employed, and a few were unemployed and receiving welfare assistance.

The interviews with this youth sample were open-ended, though we followed a general protocol of questions and themes (included in the separate volume of appendices, as **Appendix K**), which covered such areas as migration and family histories, educational and occupational attainments and aspirations in the U.S., and strategies and problems of adjustment and acculturation within family, peer and community contexts. These interviews averaged between 2.5 and 4.5 hours. In addition, we occasionally recontacted the respondent in order to verify certain information or to follow up on issues that had been raised during the initial interview. Extensive field notes were kept by both investigators during each interview, which were later elaborated in writing up each case. Most interviews were audiotaped, except in a few cases where the respondent specifically agreed to the interview without a tape recorder. Each respondent read and signed an informed consent form prior to the conduct of any interview, and each was paid a small honorarium as a token of appreciation for their time and assistance. Selected interviews were, in turn, transcribed in full--averaging in size between 75 and 125 pages per transcription. Because such transcriptions are expensive and time-consuming, we were able to transcribe fully only half of these interviews. Still, they provide

absorbing and illuminating portraits of the the variety of refugee youth problems, successes, and adaptive contexts and strategies, and we have relied on them especially in the preparation of the twelve case histories sketched in a separate volume.

In addition to the interviews with the refugee youth sample, another series of in-depth qualitative interviews was conducted with a sample of adult informants with extensive knowledge about and experience with some of the major issues addressed by SARYS. These interviews were conducted in the field with a total of 52 individuals. All but two of these interviews were not audiotaped or transcribed; instead, extensive field notes were taken and later elaborated by the co-investigators. These interviews with adult informants ranged from a half-hour to 3 hours in length.

Informants for these interviews were drawn from four broad institutional sectors: (1) the school system; (2) social service agencies; (3) local police and probation departments, and related diversion programs; and (4) parents of refugee youth and other ethnic community informants. The adult sample for the first group included teachers (at K-12 levels) and Indochinese resource teachers in city schools, counselors, administrators, and other school-related informants (these latter from outside San Diego, including state-level officials). The second group included persons working in various refugee assistance programs, family planning and related education and outreach projects, employment services, and the welfare department. The third group included police officers and juvenile probation officers knowledgeable about Indochinese delinquency and gangs; also interviewed among these informants were Indochinese staff members of a diversion program for refugee youth in trouble, and a community psychologist who also served as a formal consultant to the SARYS project. The last group included several well-informed Vietnamese, Khmer and Hmong parents, a Hmong minister and a Vietnamese Catholic priest (who also recently completed a Master's thesis on adjustment problems of Vietnamese youth based on qualitative field research, under the supervision of Professor Ima), and other MAA and ethnic community leaders working with Indochinese youth or knowledgeable about issues of relevance to our study of Indochinese youth. The information gathered from this array of informants, which helped to contextualize and "triangulate" perspectives we obtained from the refugee youth themselves, is reflected particularly in Chapters 6 and 7 of this report.

We now turn directly to our analysis of quantitative findings about the educational attainment and occupational aspirations of a representative sample of Southeast Asian students in San Diego City Schools.

Chapter 3.

EDUCATIONAL ATTAINMENT.

This chapter presents findings on two types of measures of the educational attainment of secondary school students: (1) cumulative grade point averages (GPAs), and (2) standardized achievement test scores. These data, in turn, are compared for two samples: (1) the entire cohort of 1986-87 juniors and seniors in San Diego high schools (N=24,660), broken down by ethnicity and other student characteristics, and (2) the IHARP-SARYS random sample of Indochinese students in grades 7-12 (N=239), broken down by a set of key characteristics of these students and their parents. The chapter concludes with a discussion of the principal correlates of student GPAs and achievement test scores, followed by a multiple regression analysis of the determinants of educational attainment outcomes among Southeast Asian students.

A. Characteristics of San Diego High School Students.

The sample we will consider first consists of all San Diego junior- or senior-level high school students who entered the Class of 1987 or the Class of 1988. Figure 3-1 presents a breakdown of these students by ethnic group (N=24,660). The total consists of 53% non-Hispanic whites, 17% Hispanic, 14% Black, 6% Indochinese (a total of 1,485 students), 5% Filipino, 2% Asian (Chinese, Japanese, Korean), and fewer than 1% each of Pacific Islanders, American Indians, and "Other Immigrants" (this latter including primarily Iranian and Arab students). The sample contains roughly equal numbers of males (50.6%) and females (49.4%). Figure 3-2 shows the considerable diversity among these students in their levels of English language proficiency. Fully two-thirds (67.7%) of the Indochinese students in these cohorts were classified as LEP (Limited-English-Proficient), compared to 45.3% of the "Other Immigrants," 28.2% of the Hispanics (who include many Mexican immigrants), about 12% each of the Asians, Filipinos and Pacific Islanders, only 0.5% of non-Hispanic whites (primarily European immigrants), and none among Black Americans. Figure 3-3 provides a more detailed picture of minority language classifications, showing the relative proportion of each ethnic group consisting of LEP, FEP (Fluent-English-Proficient students whose primary home language is one other than English), and Native-English students (this latter category

Figure 3-1.

High School Student Cohort, by Main Ethnic Groups (1986-87 San Diego Seniors and Juniors, N=24,660)

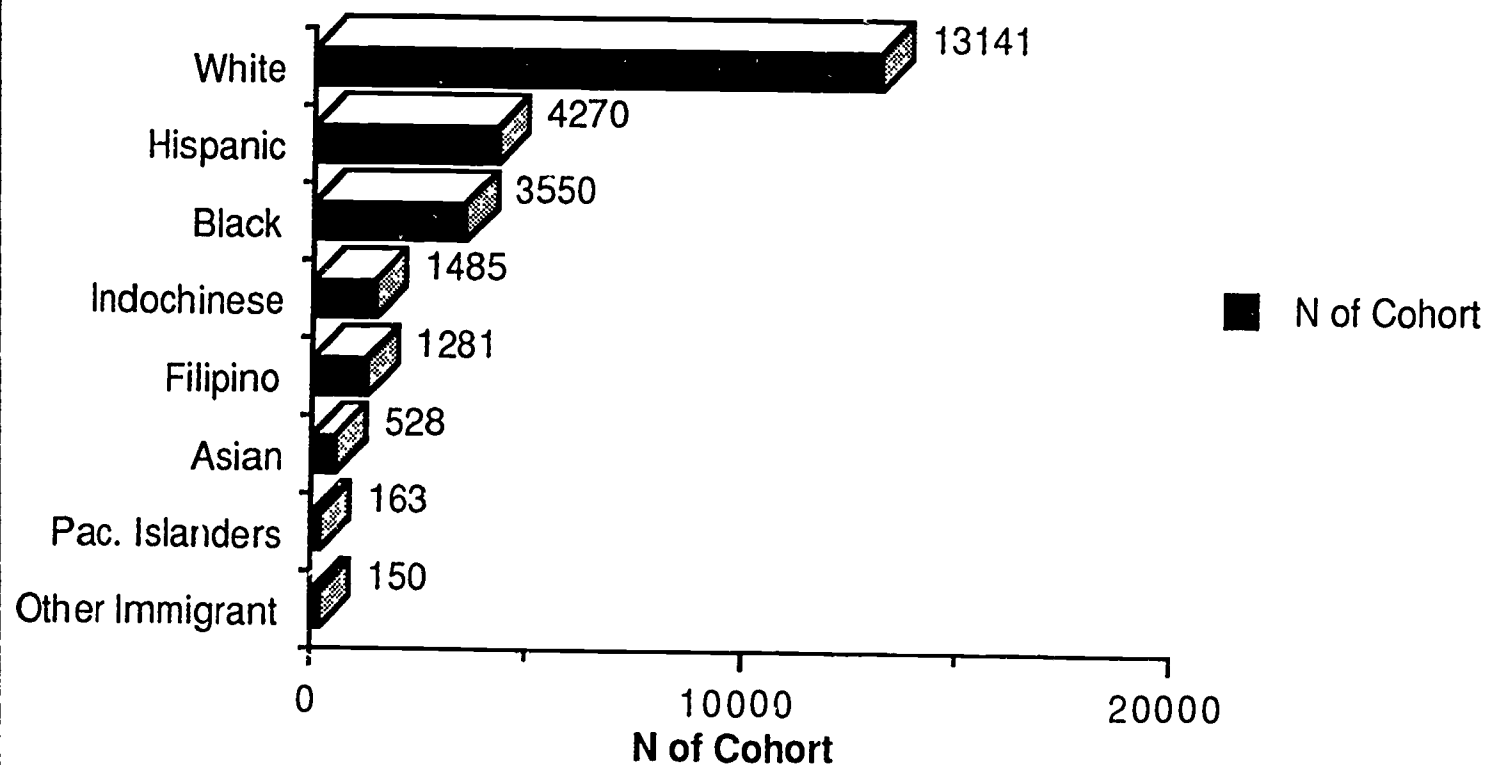


Figure 3-2.

Limited-English-Proficient Students, by Ethnicity (1986-87 San Diego Seniors and Juniors, N=24,660)

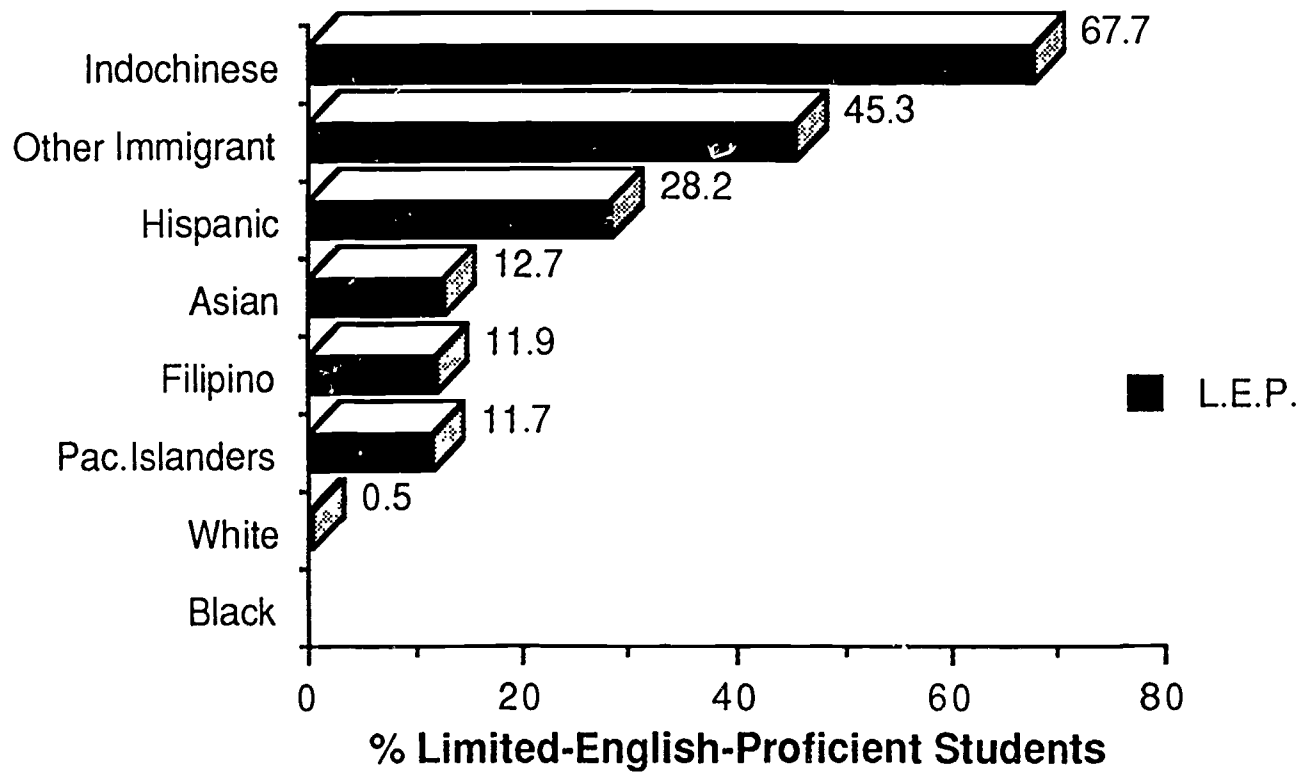
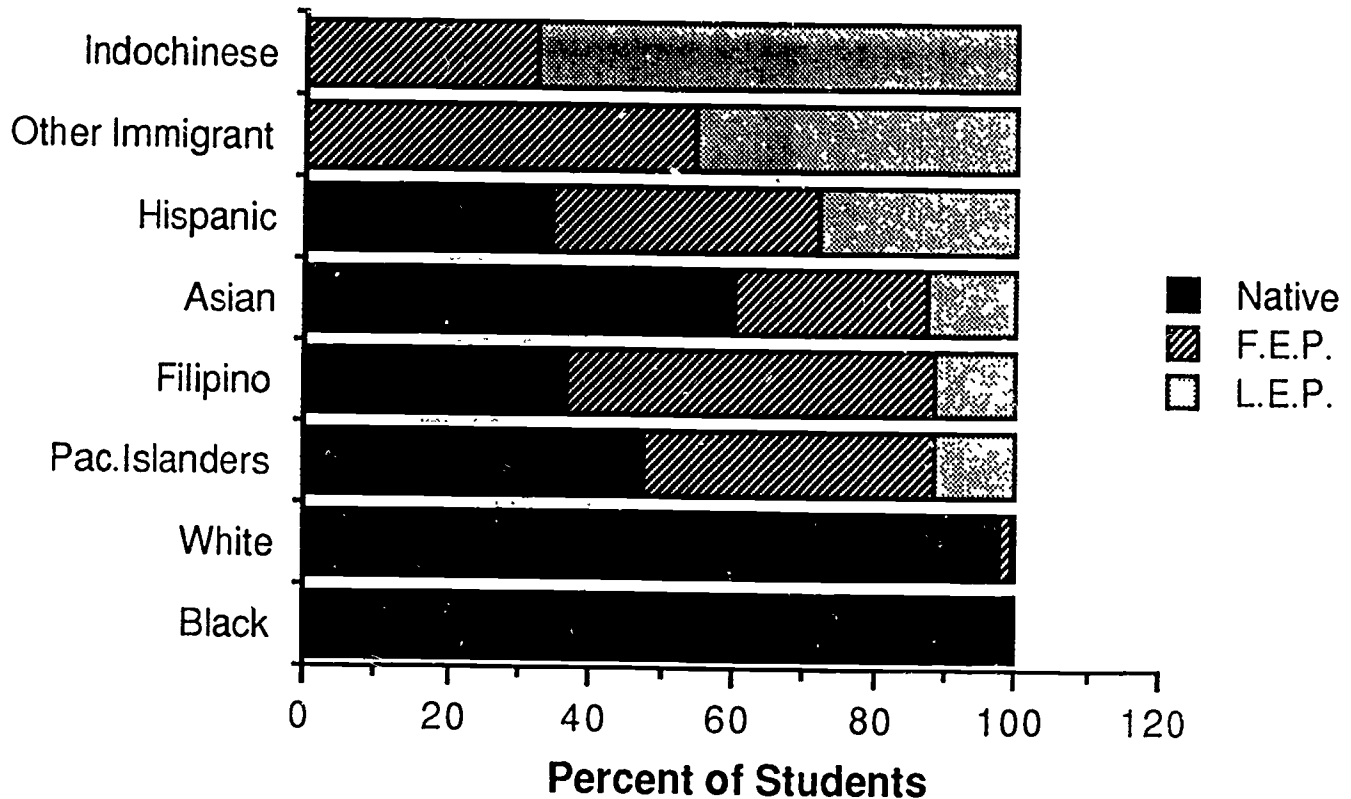


Figure 3-3.

**Native-English, Fluent (F.E.P.) and Limited (L.E.P.) Students
(1986-87 San Diego Seniors and Juniors, N=24,660)**



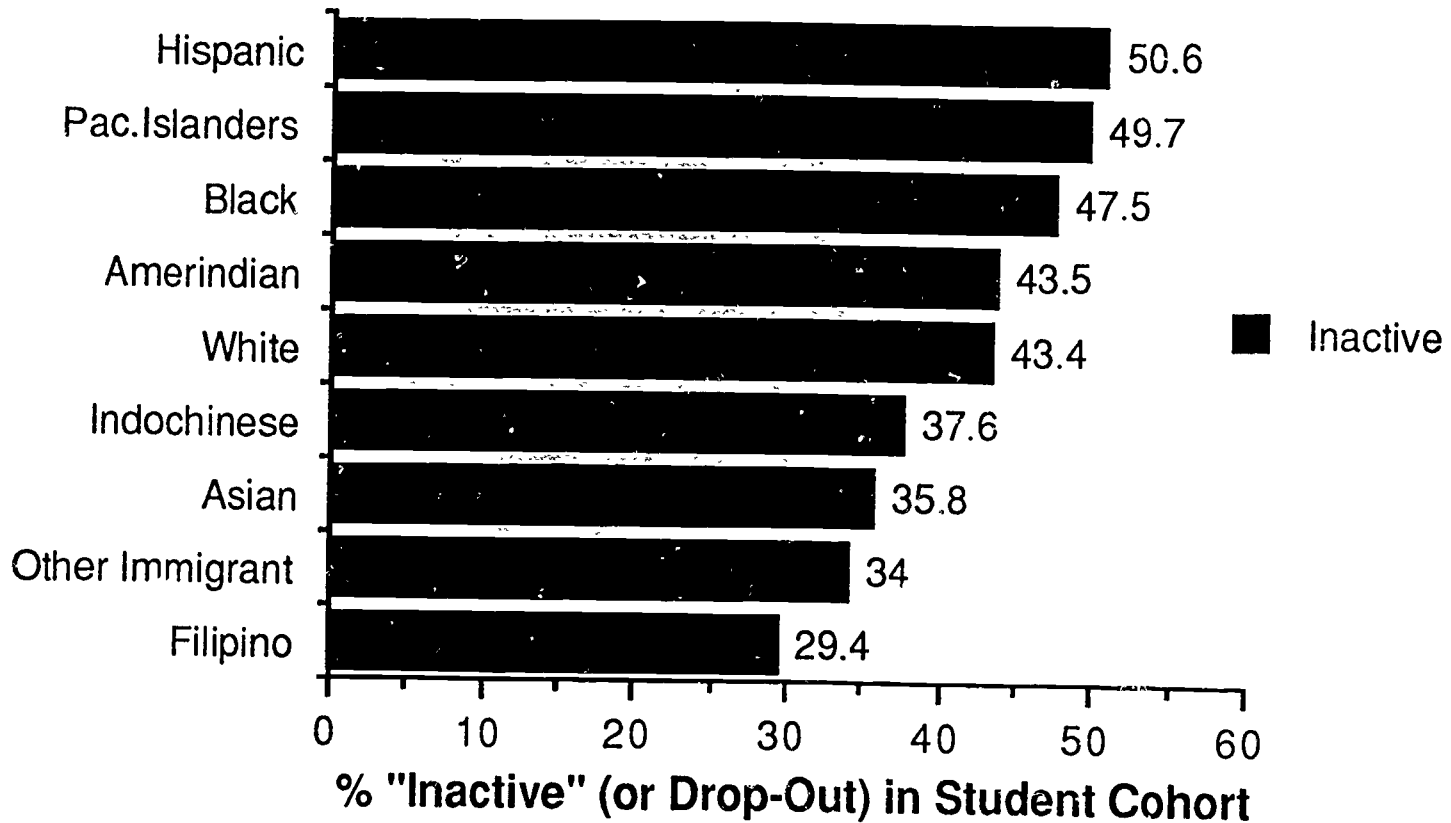
dominated by Blacks and non-Hispanic whites, as well as by about 60% of the Asians, reflecting the fact that these are probably third-generation Americans).

Now, it should be added that the sample contains all student members of the Classes of 1987 and 1988, defined as "four-year cohorts." That is, these cohorts include all "active" juniors and seniors currently enrolled during the 1986-87 school year, as well as any "inactive" students who entered these cohorts at some point since the 9th grade but who may have left the San Diego City Schools at a later time for whatever reason (e.g., students who may have moved out of the city and transferred to another school system, or students who dropped out of school). The inclusion of both active and inactive students in the cohort makes for a less biased sample for the comparative analysis of educational achievement, since it is more inclusive of all types of students and less selective of certain types of students. For example, student dropout rates vary considerably by ethnic group; a sample that considers only the performance of currently enrolled ("active") seniors would thus exclude from the analysis all students who may have dropped out of school at grades 9, 10 or 11, who are also the students with the lowest levels of academic achievement, and it would also exclude all students who may have transferred out to more affluent suburban schools. In either case, such exclusions would have the effect of biasing the composition of the remaining groups for comparative assessments.

In addition to providing a fairer and more complete estimate of educational outcomes by ethnic student cohorts, this approach also increases the size of the sample. In this case, the sample consists of 24,660 students. Of these, 13,821 (56%) were active students, and 10,839 (44%) were inactives. Figure 3-4 provides data on the proportion of "inactive" students in the sample by ethnic group, showing higher "inactive" rates among Hispanic, Pacific Islander and Black students, and lower rates for Indochinese, Asian, Filipino, and "Other Immigrant" students. As will become evident in Chapter 5, although it was not possible to ascertain exactly the proportion of dropouts among the "inactives," these rates generally parallel the dropout rates for these student groups, suggesting that a substantial majority of these do consist of students who dropped out of school at some point in the previous three years (Appendix A, in the separate volume of appendices, provides additional tables of data that further specify the characteristics of this high school student cohort.)

Figure 3-4.

"Inactives" In Student Cohort, by Ethnicity **(1986-87 San Diego Senior-Junior Cohort, N=24,660)**



B. Grade Point Averages of San Diego High School Students.

How are Southeast Asian students doing academically compared to all other student groups in these cohorts of juniors and seniors? A first answer to this question is given in Figure 3-5, which provides the mean cumulative GPA (excluding grades in Physical Education courses) of these students by ethnic group. Remarkably, the data show that with the exception of the two small categories of "Asian" and "Other Immigrant" students (whose parents reflect largely affluent or professional backgrounds), **the GPA of Indochinese students (2.52) is higher than that of all other student groups, outperforming by a significant margin the GPAs of majority white students (2.33).** Interestingly, particularly in view of the "model minority" label that has been applied to Asian students, these data also suggest the wide diversity in GPAs among several categories of Asian/Pacific Islanders: while "Asian" student cohorts (Chinese, Japanese, Korean) have the highest GPAs (2.66), Samoans exhibit the lowest GPAs (1.76), with Filipinos (2.44) and non-Samoan Pacific Islanders (2.01) ranging in between.

What is the effect of gender on GPA? Figure 3-6 shows that, without exception, the GPAs of female students are higher than those of their male counterparts for every ethnic/racial group in San Diego high schools. The relative rankings of males and females by ethnicity remain essentially the same as those shown in the previous ethnic breakdowns.

Given the wide diversity noted above in limited English language proficiency among various student groups, what are the GPAs of LEP students, as compared to FEP and Native-English students? Figure 3-7 addresses this question, and the findings are provocative. As would be expected, the GPAs of FEP students are generally better than for LEP students--and for the Indochinese, the GPAs of the FEP students are significantly higher than those for the LEP. Moreover, the GPAs of Indochinese FEP students are much higher than the GPAs of Asian students whose native and primary home language is English. Indeed, what is intriguing is that the lowest GPAs across the board are those of native-English American students. For whites, Hispanics, Filipinos and Asians, the GPAs of (preponderantly) immigrant FEP students whose primary home language is not English are always higher than the GPAs of their (preponderantly) U.S.-born, native-English, ethnic/racial counterparts. Thus, for example, the mean GPA of FEP Asians is 3.02 and that of LEP Asians is 2.97, whereas the GPA of non-immigrant Asians whose primary home language is English is only 2.43 -- close to that for majority white students (2.33). **These data suggest that immigrants and refugees to**

Figure 3-5.

Cumulative G.P.A.'s by Ethnic Group **(San Diego HS Seniors and Juniors, N=24,660)**

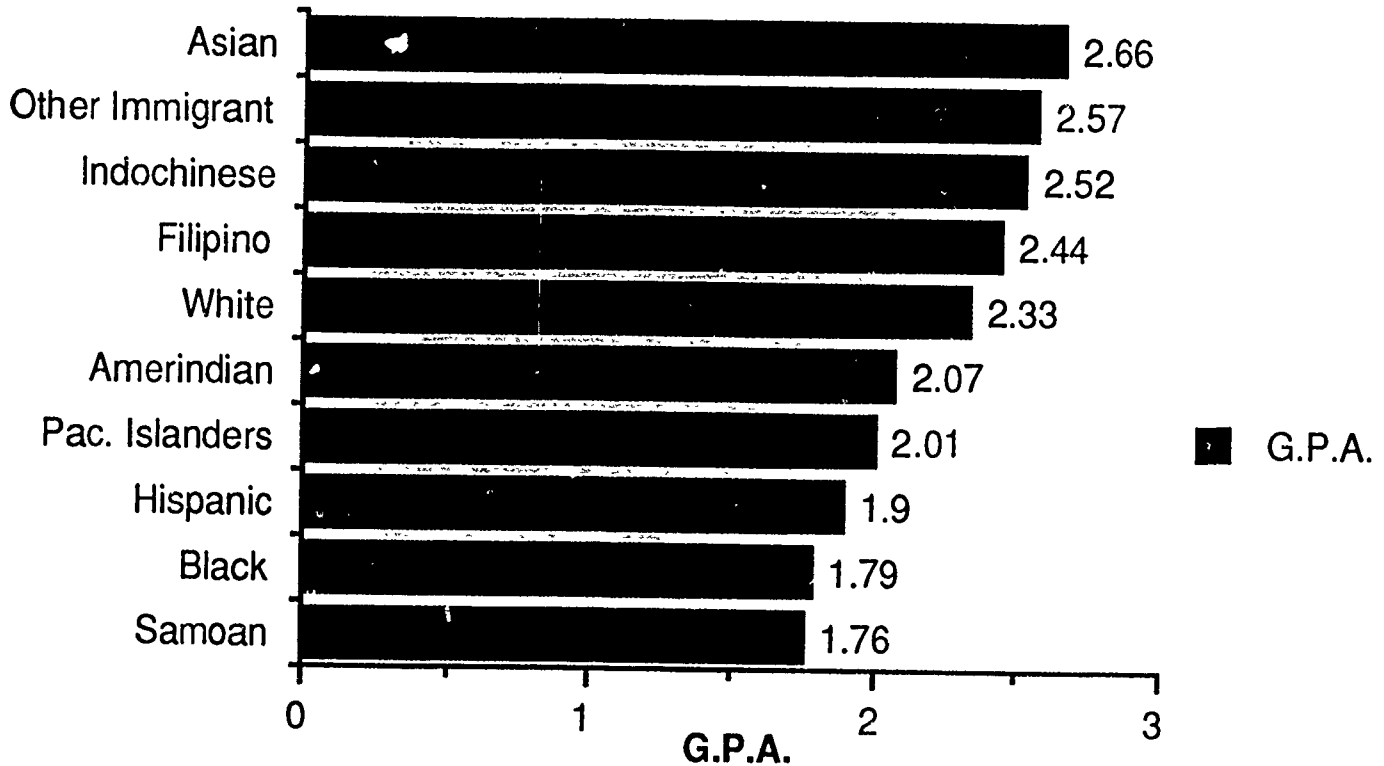


Figure 3-6.

Grade Point Average by Ethnicity and Gender (San Diego HS Seniors and Juniors, N=24,660)

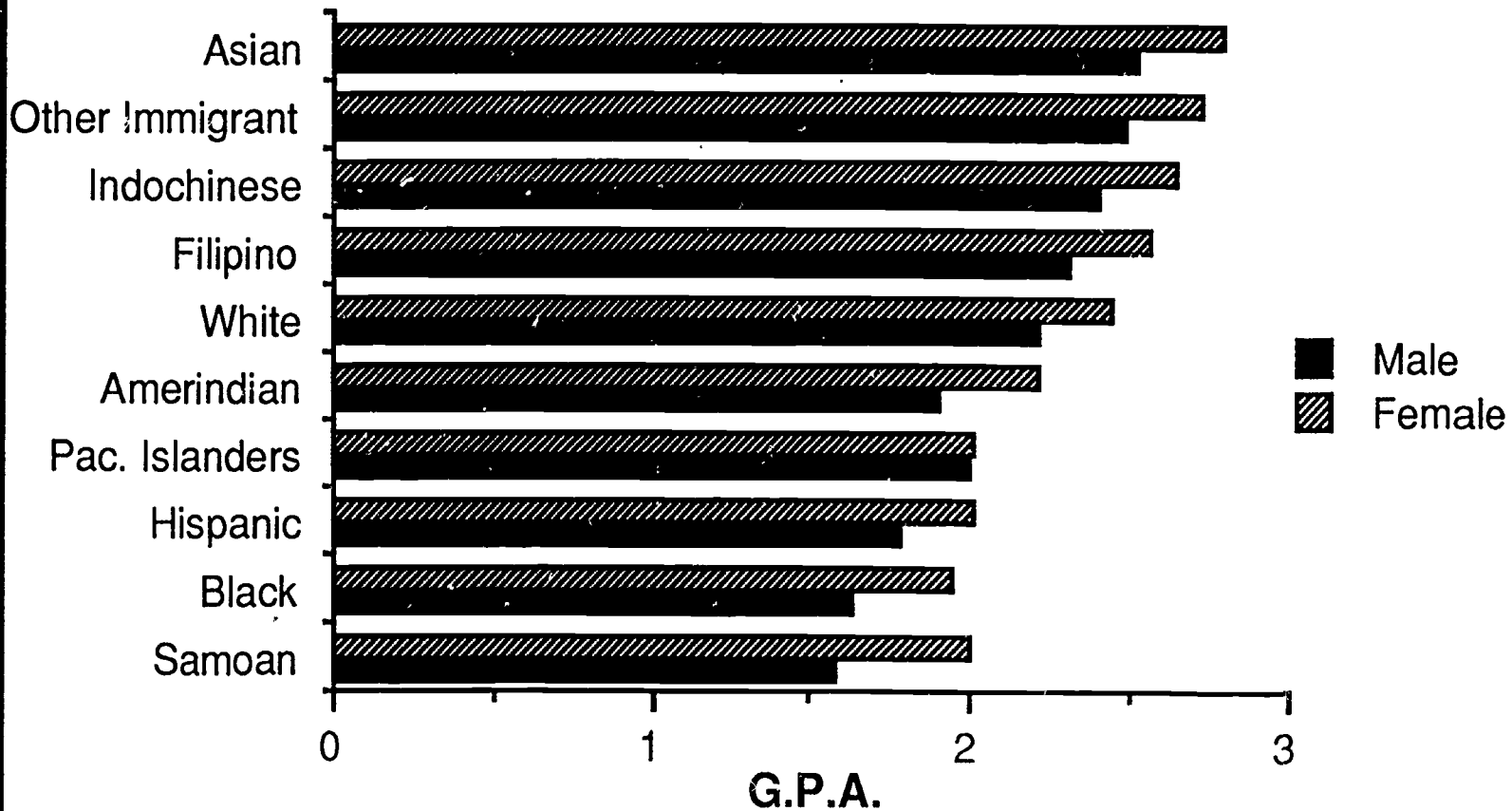


Figure 3-7.

**GPA's of Native, F.E.P. (Fluent) and L.E.P. (Limited-English) Students
(1986-87 San Diego Seniors and Juniors, N=24,660)**

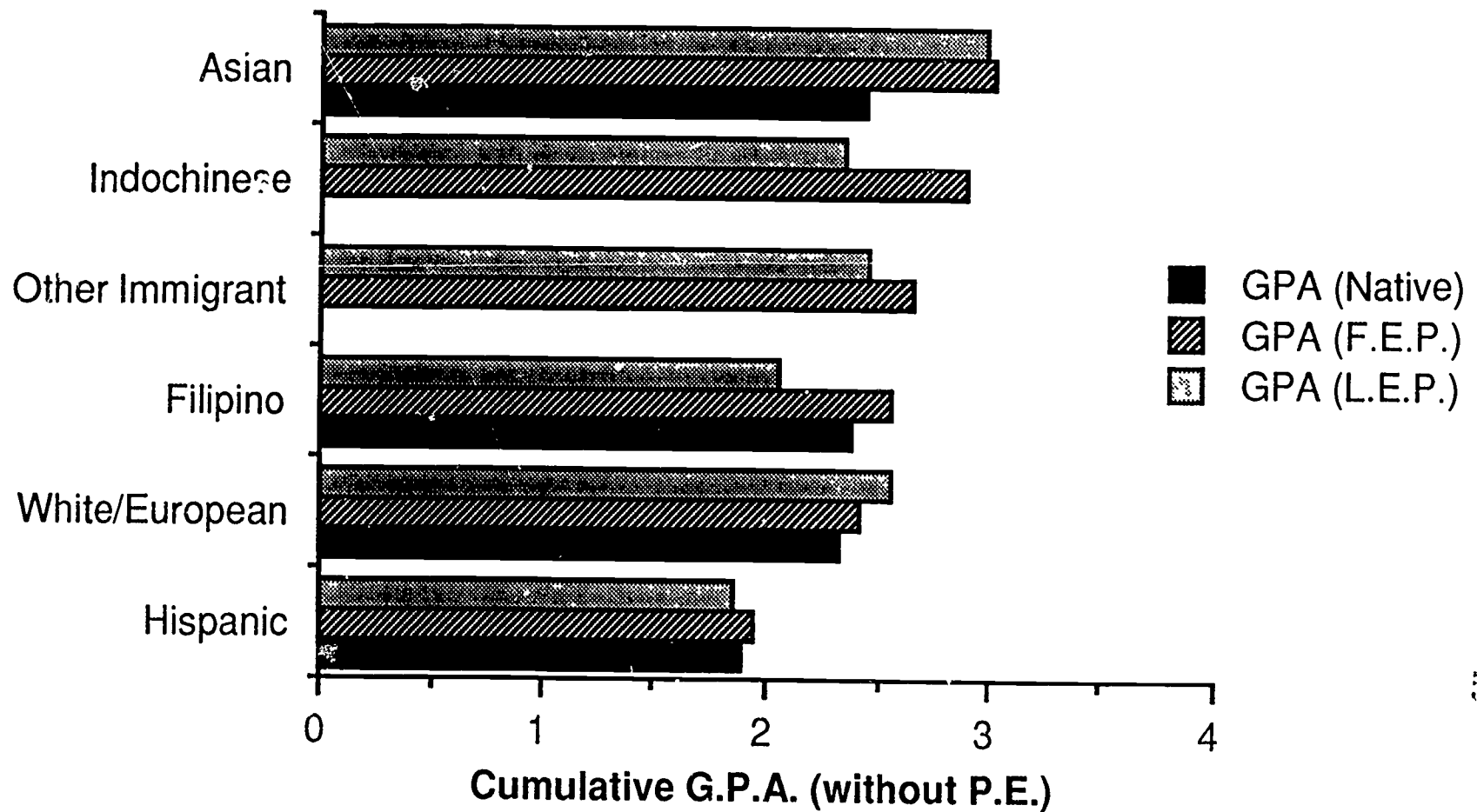
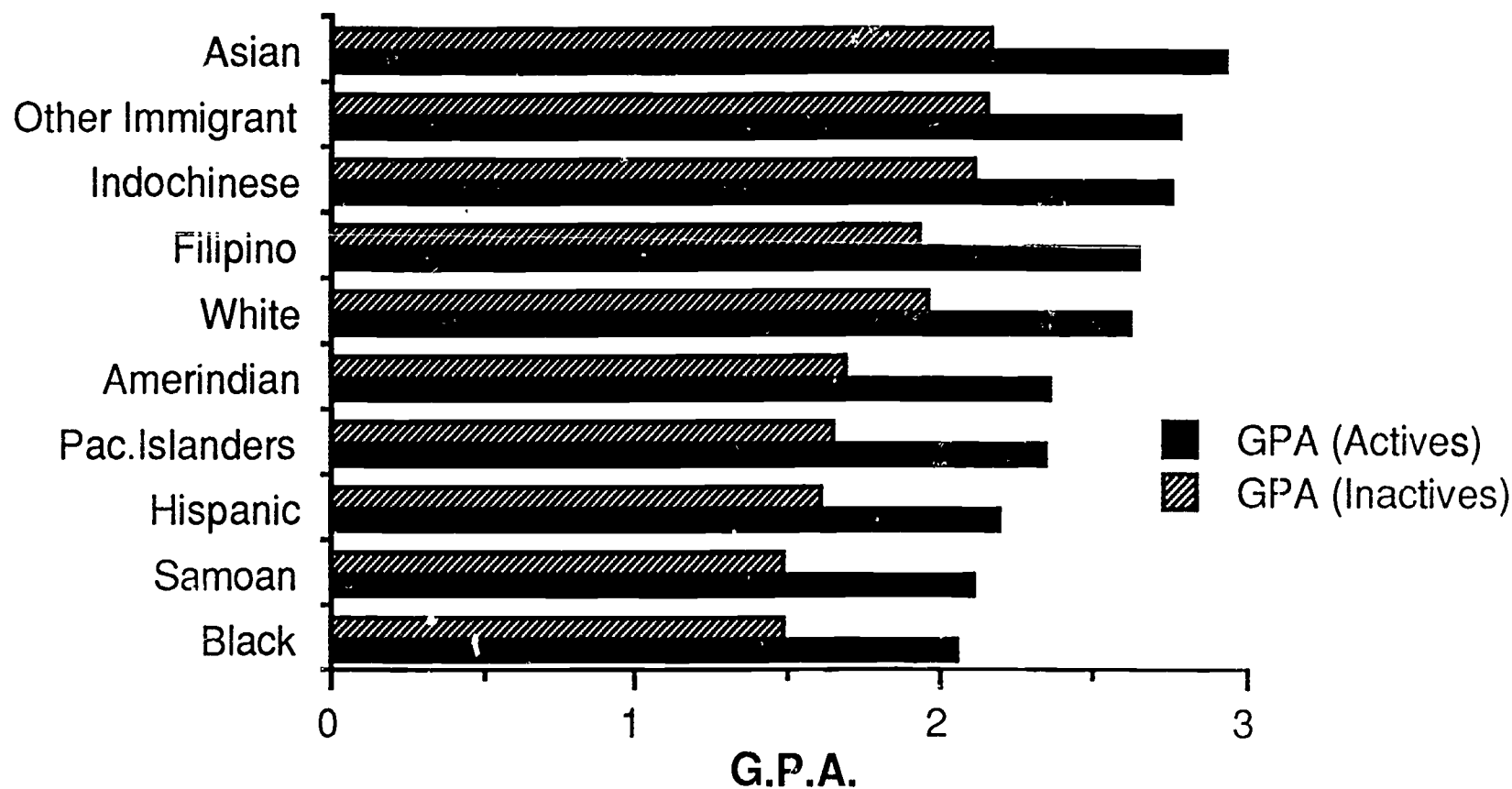


Figure 3-8.

G.P.A.s of "Active" vs. "Inactive" Students (1986-87 San Diego Seniors and Juniors, N=24,660)



the U.S. -- whether from Asia, Europe, or Latin America -- are systematically outperforming native-born American students despite initial (or even persisting) English language handicaps.

Finally, Figure 3-8 contrasts the GPAs of "active" students against those of "inactive" students, as defined above. It is immediately clear that across all ethnic groups without exception, the GPAs of "inactive" students are far worse than those of currently enrolled students, further suggesting that the preponderant proportion of "inactives" consists of students who have dropped out of school before the 12th grade--who are also known to be doing, in most cases, much more poorly academically than those students who do not drop out, as noted earlier. An analysis of student dropout rates among all San Diego high school students by ethnicity, as well as among the five major Southeast Asian ethnic groups, will be provided below in Chapter 5.

C. Characteristics of Southeast Asian Students and Their Parents.

In Chapter 2 we provided a discussion of the nature of the IHARP-SARYS sample of Southeast Asian students in San Diego City Schools, which is derived from the IHARP random sample of all Southeast Asian refugee families who were residing in San Diego County as of April 1983. Fathers and mothers in each of these IHARP families had been interviewed at length in mid-1983 and again in mid-1984. Complete academic histories were then obtained by SARYS for all school-age children of IHARP families with records in the San Diego City Schools data files as of Fall 1986. Since the SDCS maintains data files on all students for at least three years after a student graduates or otherwise leaves the school system, data was available for all IHARP-SARYS students in the sample even if they had moved out of San Diego at any time between 1984 and 1986. Thus, the IHARP-SARYS sample contains and is representative of Southeast Asian students who (1) arrived in the United States between 1975 and 1982, (2) were enrolled at any grade level in SDCS schools during the 1982-83 academic year, and who therefore, provided that they were enrolled at least through 1983, (3) may have attended SDCS schools at any time between 1975 and 1986. The IHARP-SARYS sample consequently includes both "first-wave" and "second-wave" students, but it does not include any Southeast Asians who arrived in the United States after 1983.

In this section of the report, we turn to a discussion of the characteristics of these students and their families, focusing on the subsample of secondary school students--that is, those enrolled in grades 7 to 12--which will be the focus of the analysis of educational attainment that will then follow. This subsample (N=239) includes 54 Vietnamese students, 45 Chinese-Vietnamese, 58 Lao, 47 Hmong, and 35 Khmer students. (The Khmer sample is smaller than the others, in part reflecting the fact that the Khmer were the most recently-arrived refugee group overall at the time the IHARP sample was drawn; their numbers, however, have been increasing locally as they have nationally over the past three years.) Of the 239 students in the sample, 122 (51%) are male and 117 (49%) are female. (See Appendix C for several tables of data detailing the characteristics of this sample.)

Figure 3-9 shows the students' average length of residence in the U.S. as of Fall 1985, by ethnic group. The Vietnamese have been here the longest (6.2 years), followed by the Hmong, the Chinese-Vietnamese and the Lao (all three groups averaging just over 5 years), and finally the Khmer (4.5 years). Figure 3-10 displays their year(s) of arrival in the United States, showing that over a quarter of the Vietnamese were "first-wave" refugees, arriving during

Figure 3-9.

Indochinese Students' Length of Residence in the U.S., 1985
(IHARP-SARYS Sample, N=239)

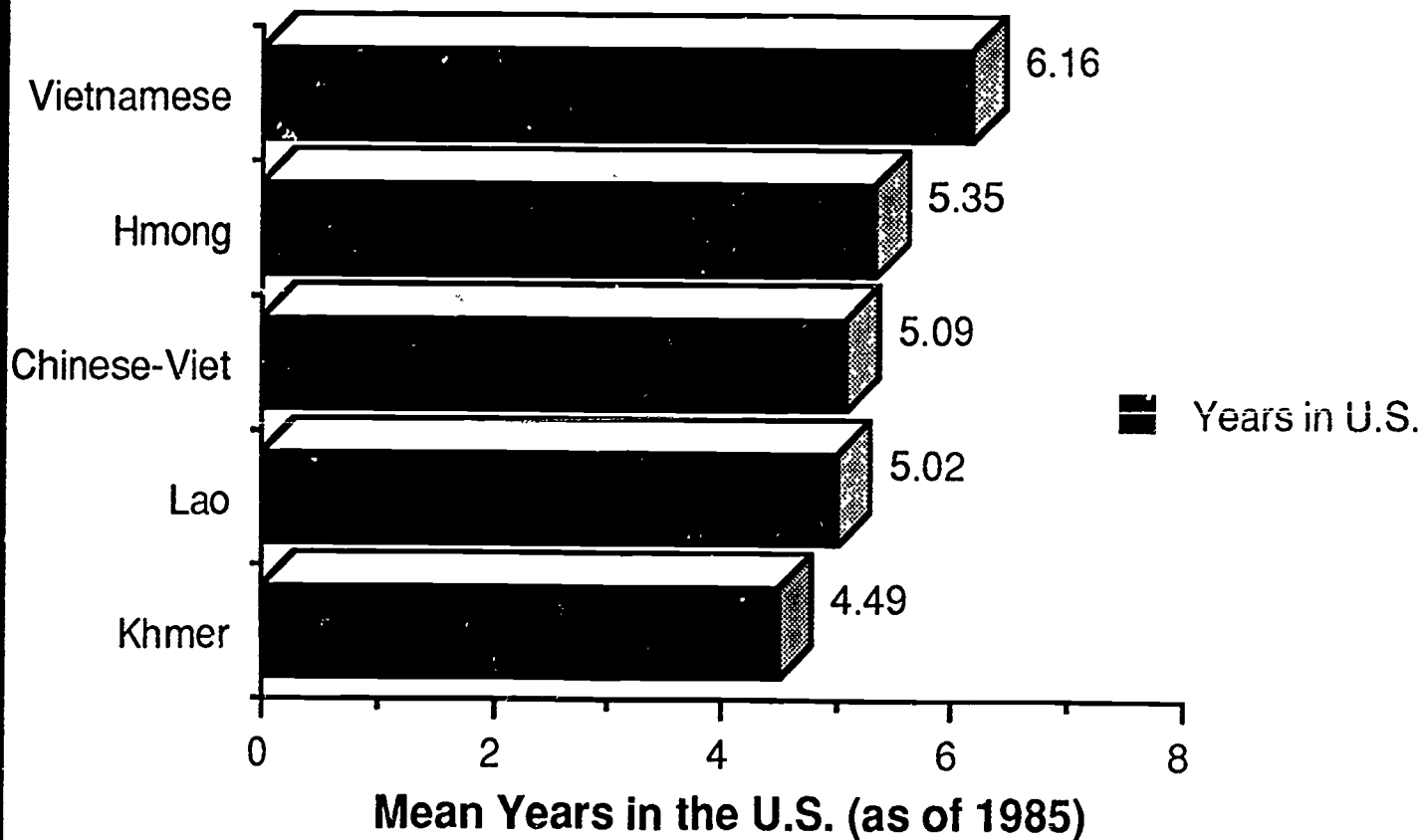
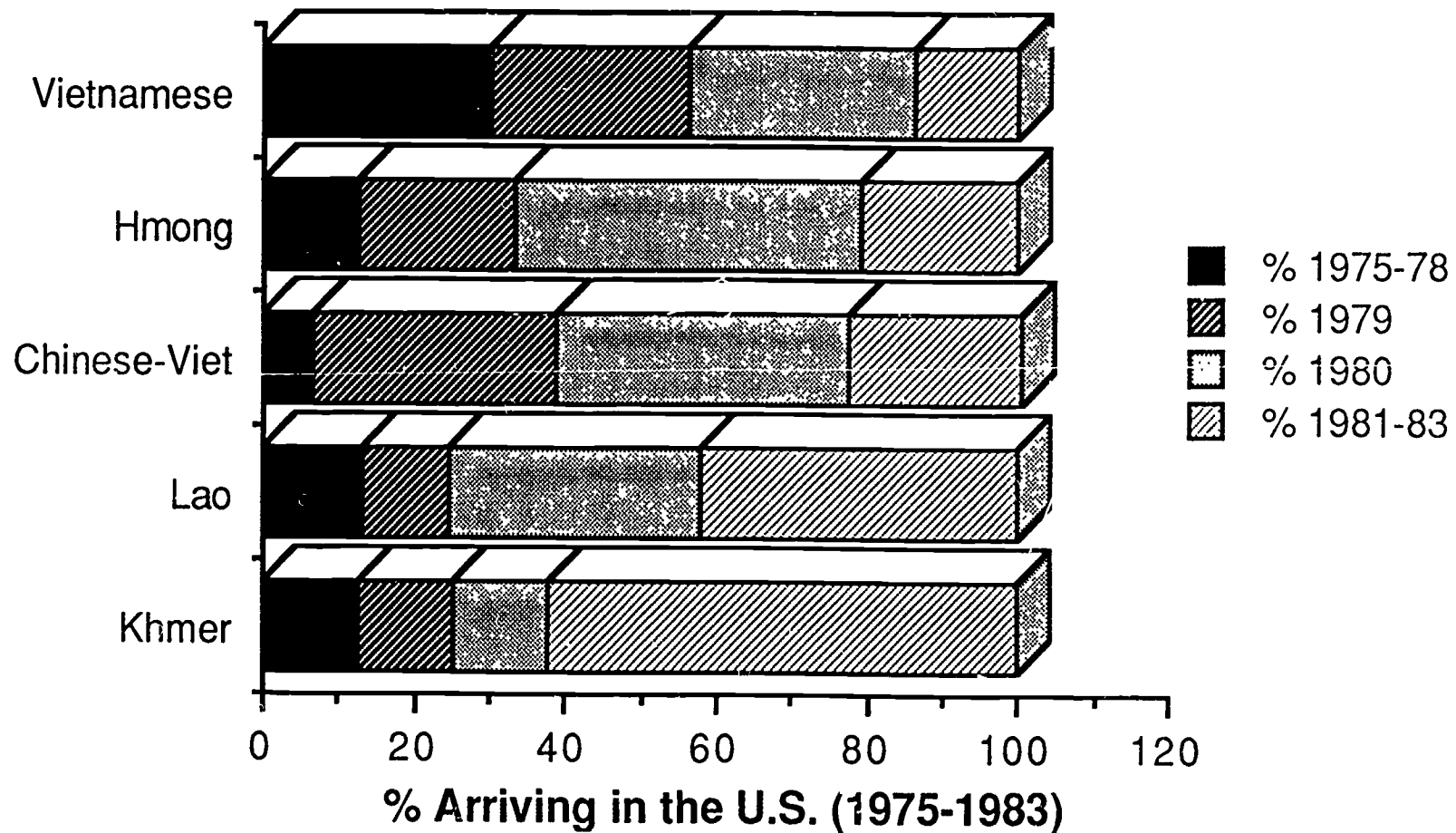


Figure 3-10.

Year of Arrival in the U.S., by Ethnicity of Students (IHARP-SARYS Sample, N=239)



1975-78; for the Chinese-Vietnamese, almost all of whom were "boat people," the modal years of their arrival were 1979 and 1980; nearly half of the Hmong arrived in 1980, the peak year of refugee resettlement in U.S. history; the Lao arrived primarily in of after 1980; and the Khmer arrived principally during 1981-83. Adaptation to a new school or a new society takes, among other things, **time**. For refugee adults as well as children, time in the U.S. is an important correlate of adaptive processes, such as learning to speak, read and write proficiently in English, "learning the ropes" of the new community and culture, finding stable employment and earnings, developing a network of friends, and the like.

In general, with respect to the **parental composition** of their homes, most of these students (over 80%) live in intact families in San Diego with both parents at home, with about 15% living in single-parent female-headed households, and another 3% in single-parent (or guardian) male-headed households. However, there are very significant differences between groups in the parental composition of the homes of these students. As Figure 3-11 vividly shows, the aftermath of the "killing fields" period in Cambodia in the late 1970's caused tremendous family disorganization among the Khmer: less than half (49%) of the Khmer students in our sample lived in intact families with both parents, with 40% living with their mother only (the IHARP study found that about 1 in 4 Khmer refugee women was widowed), and 11% with their father only. By contrast, over 90% of the Vietnamese and Chinese-Vietnamese students lived with both parents, as did about 83% of the Hmong and the Lao. In most of the 17% of the cases where Hmong students lived with their mother only, the mother was widowed; in most of the 17% of the cases where Lao students lived with their mother only, the mother was separated or divorced.

There is also great diversity in the **social class** backgrounds of these students' families. Figure 3-12 shows the level of pre-migration education of the fathers and mothers of the students in the sample. Overall, Vietnamese parents are much more educated, with an average of over 9 years of education, followed by the Chinese-Vietnamese (nearly 7 seven years), then the Khmer and the Lao (each averaging about 5 years), and lastly the Hmong (with a parental average of just above a first grade education). In all groups, fathers have significantly higher levels of education than mothers. Note that in all groups except the Vietnamese, the average level of education of the mothers is less than sixth grade, with almost all Hmong mothers never having attended school. About 95% of the Vietnamese and Chinese-Vietnamese came from urban backgrounds, as did some 75% of the Lao. Over 50% of the Cambodians, however, came from rural backgrounds, as did about 90% of the Hmong.

Figure 3-11.

Parental Composition of Indochinese Students' Homes (IHARP-SARYS Sample, N=239)

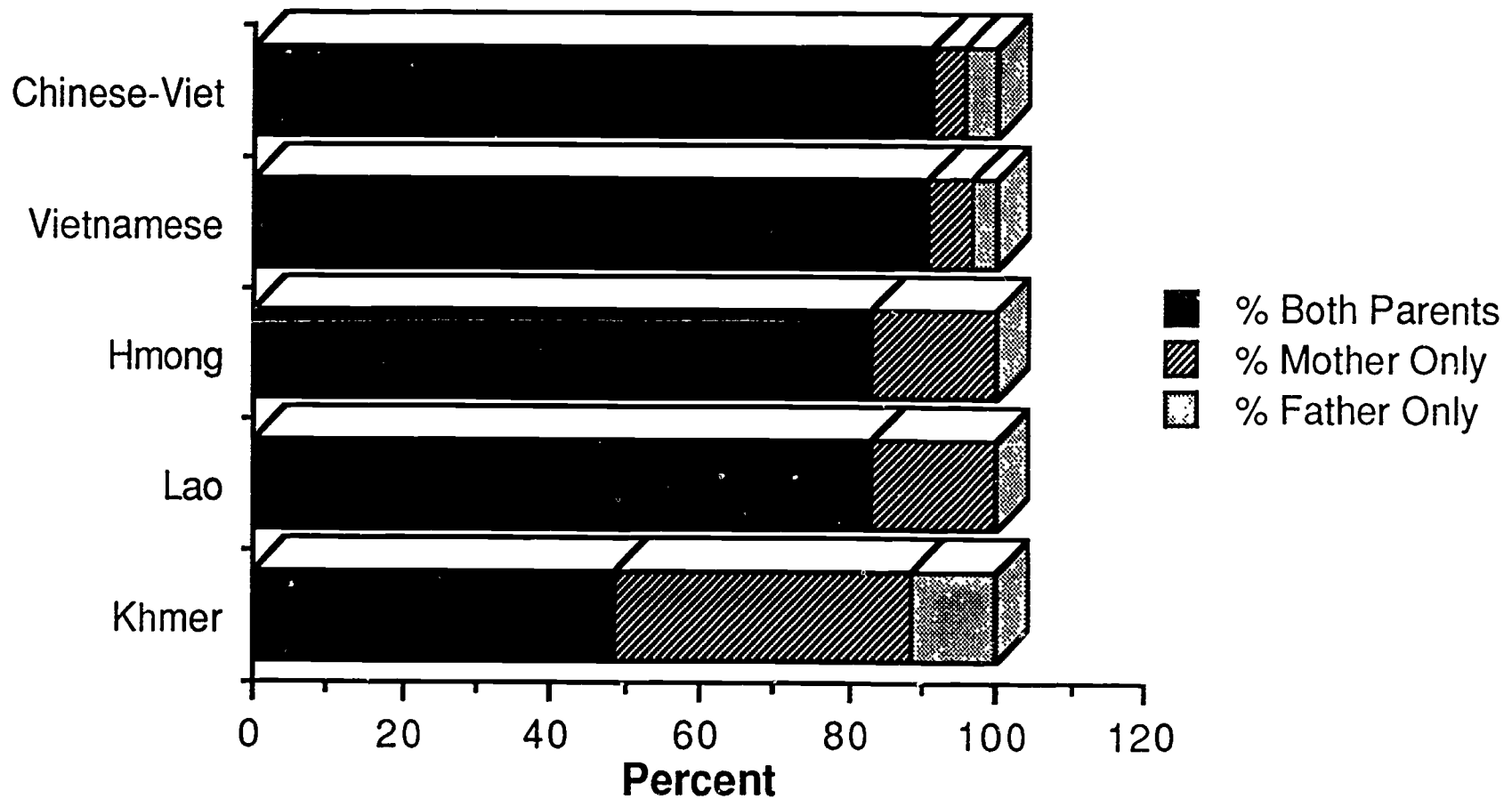
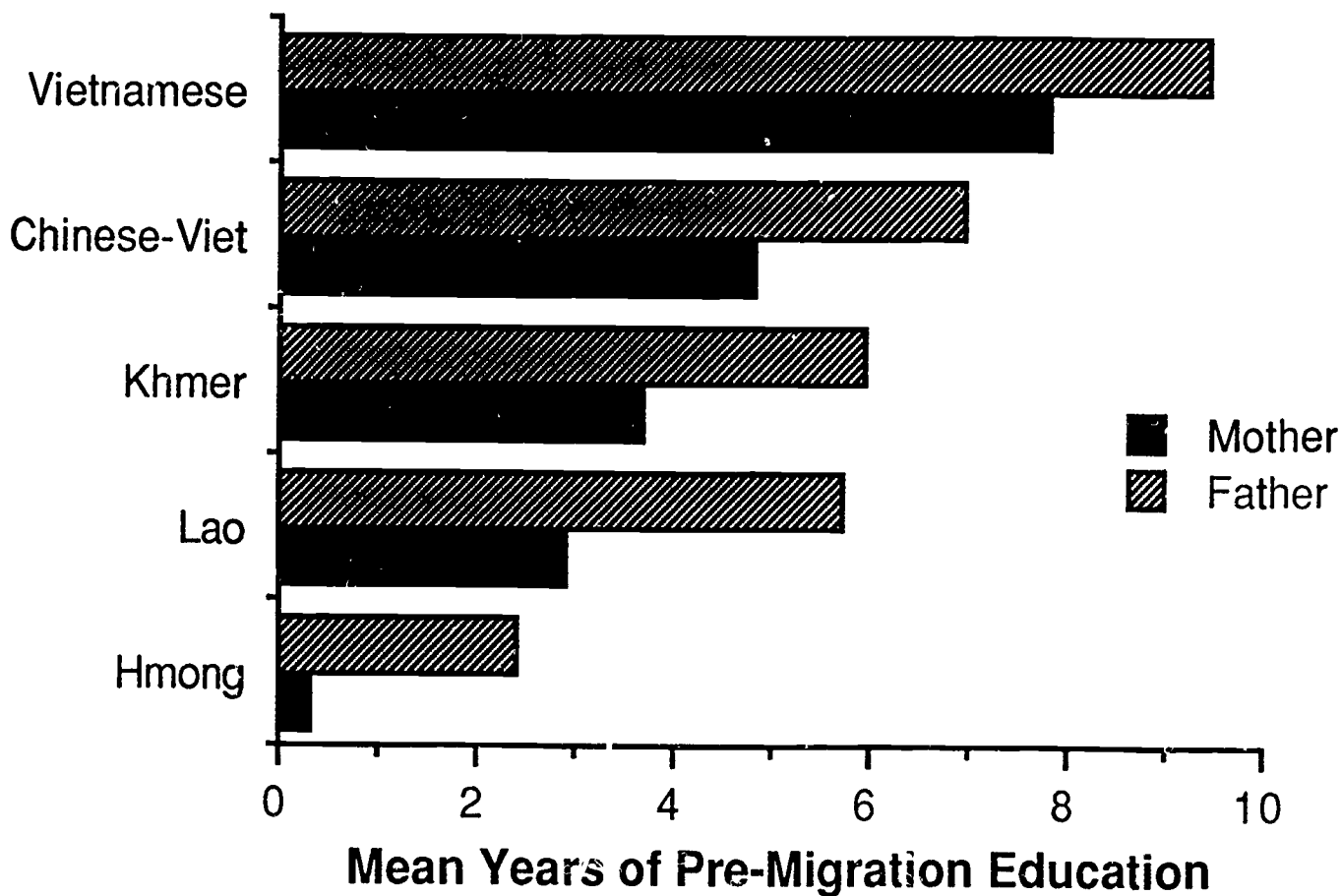


Figure 3-12.

Indochinese Parents' Level of Pre-Migration Education (IHARP-SARYS Sample, N=239)



Both their level of education and their length of residence in the U.S. is reflected in the parents' level of **employment** in San Diego as of 1984 (when the T2 IHARP interviews were completed). Figure 3-13 shows the number of parents employed in 1984 per student's family. The Vietnamese (both fathers and mothers), who are the most educated and have been in the U.S. the longest, were also much more likely to be employed, followed by the Chinese-Vietnamese. The Lao were more likely to be employed than the Khmer despite roughly equivalent levels of education, reflecting partly the fact that the Lao have been in the U.S. longer than the Khmer, but partly also the fact that far more Khmer parents are widowed mothers on public assistance. The Hmong, finally, reflect the highest levels of unemployment -- as well as the highest levels of poverty and welfare dependency, and by far the largest families. Indeed, the economic situation of these recently arrived refugees, while slowly improving over time, is severe. The IHARP study found **poverty rates** of about 90% among Hmong families in San Diego in both 1983 and 1984, compared to poverty rates of about 80% for the Khmer and Lao, of about 70% for the Chinese-Vietnamese, and of over 50% for the Vietnamese. Their children attending San Diego schools are, by and large, children of poverty. (For further analyses of the socioeconomic situation and adaptation of their parents, see Rumbaut 1985b, 1986, 1988 in press; Rumbaut and Weeks, 1986.)

The trauma of the Indochina war and of their migration as refugees to the U.S., the separation and loss involved in their resettlement, and the enormous difficulties of their resettlement (e.g., learning a new language and culture, finding housing and employment, coping with poverty and prejudice), particularly for those from rural backgrounds with little prior education or transferable occupational skills -- all of these factors also take a **psychological toll** on the parents of the Southeast Asian students. The IHARP study, for example, found rates of clinically significant psychological distress among these Indochinese adults that were over four times greater than those among American adults, and the levels of depressive symptomatology among the Cambodians were significantly higher than any observed for any other group (see Rumbaut, 1985a). Figure 3-14 shows the levels of psychological depression among the fathers and mothers of the students in our IHARP-SARYS sample, as measured by a standardized instrument (for details on measurement and scale construction, see Rumbaut, 1985a). The Khmer as a whole, and Khmer mothers particularly, exhibit the highest levels of depression (and for the Khmer, IHARP longitudinal data suggest that the depressive symptoms are chronic, not merely transient mood or affective disorders), followed by the Hmong and the Lao, and lastly by the Chinese-Vietnamese and the Vietnamese. This ranking applies for both fathers and mothers generally; the one noticeable exception is that Lao mothers reflect a higher level of depression than might have been

Figure 3-13.

Indochinese Parents Employed in San Diego, 1984 (IHARP-SARYS Sample, N=239)

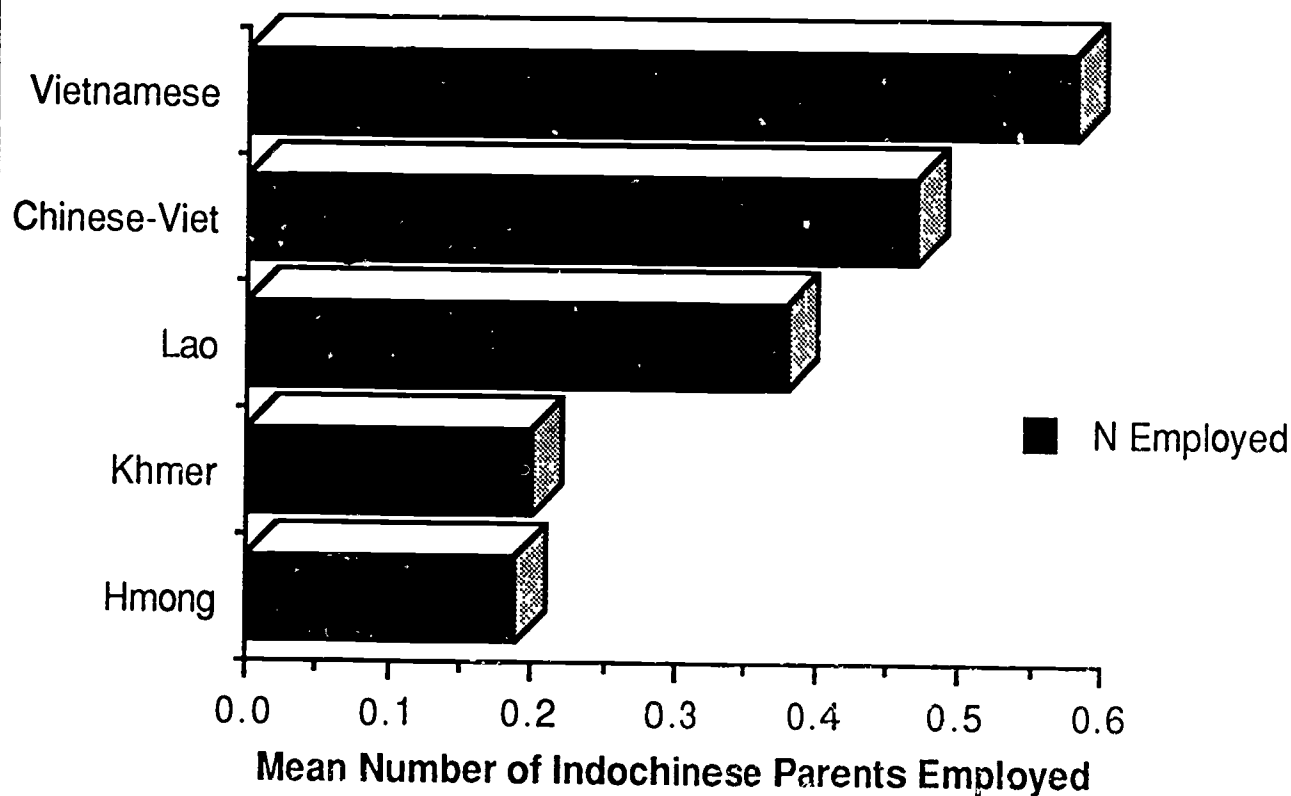
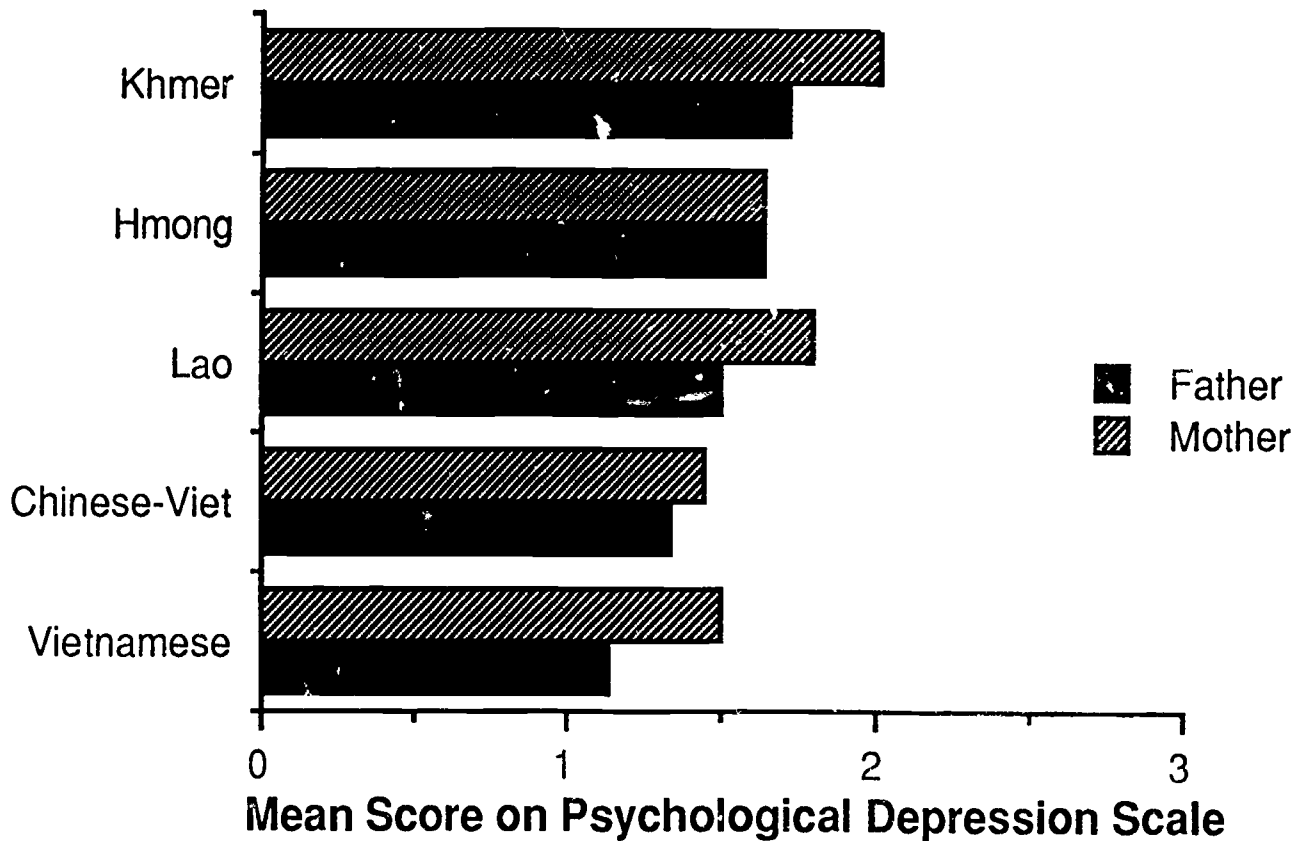


Figure 3-14.

**Level Of Psychological Depression of Indochinese Parents
(IHARP-SARYS Sample, N=239)**



expected. Overall, mothers are significantly more depressed than fathers, except for the Hmong, where levels of depression are identical for both fathers and mothers.

All of these characteristics of Southeast Asian students, and of their parents and families, may affect their educational progress. In a subsequent section of the report, we will provide the results of a multivariate analysis to attempt to determine the independent effects of all such variables on students' educational outcomes, such as GPAs and achievement test scores. But first we will turn to a discussion of our findings concerning these educational outcomes among the students in our IHARP-SARYS sample.

D. Grade Point Averages of Southeast Asian Students: Comparative Results.

Table 3-1 provides comparative data on GPAs for two samples -- the IHARP-SARYS sample of secondary-level students (N=239), and the SDCS cohort of all active 12th-grade students as of Fall 1985 in San Diego high schools -- broken down by ethnic/racial category. These additional SDCS data reflect the cumulative grade point averages (excluding Physical Education courses), as of December 1986, of a total of 6,377 currently-enrolled seniors. (Because data were not available from the SDCS for all students in grades 7-12, which would have permitted a more precise comparison with our IHARP-SARYS sample, we are relying instead for our purposes here on the data on active seniors reported in Table 3-1.) The results, which parallel those noted earlier for the entire cohorts of active and inactive juniors and seniors in SDCS schools, show that "Asians" have the highest percentage of students with GPAs above 3.0 (52.1%), followed by Indochinese students (39.6%), Filipinos (38.3%), non-Hispanic whites (34.6%), Pacific Islanders (24.2%), Hispanics (13.8%), and Blacks (9.4%). In short, in this sample too we confirm the finding that Indochinese students (here, graduating seniors) are outperforming all but a small category of other Asian students in San Diego city schools--including majority white students.

Because the SDCS data cannot provide breakdowns by sub-Indochinese ethnicity to permit an analysis of patterns of educational achievement among the various refugee ethnic groups, we rely on the IHARP-SARYS sample for just such a comparison. First, however, it is important to ascertain the degree of fit (or representativeness) of the IHARP-SARYS sample with that of the Indochinese population in the San Diego city schools. The results in Table 3-1 for the Indochinese totals in the two samples are impressively similar, and add to our confidence about the generalizability of findings based on the IHARP-SARYS sample. Thus, the SDCS data show 39.6% of Indochinese students with GPAs above 3.0, compared to 40.4% of the Indochinese students in the IHARP-SARYS sample; and in the two samples, respectively, 48% vs. 45.2 % of the students had GPAs between 2.0 and 2.9, while 12.4% vs. 14.6% had GPAs below 2.0 (i.e., below a C average). These data suggest that the IHARP-SARYS random sample may reasonably be used for comparisons of the various Indochinese ethnic groups against other non-Indochinese ethnic groups in the SDCS.

The IHARP-SARYS data shown in Table 3-1 show considerable variation among the various Indochinese ethnic groups, as expected, but also some intriguing and unexpected results. When we began this investigation, we hypothesized that those students whose parents

Table 3-1.
Cumulative Grade Point Averages (GPAs)
of Indochinese v. Non-Indochinese Students
in San Diego City Schools (SDCS),
by Ethnicity *

(SDCS High School Seniors, N = 6,377; IHARP-SARYS Sample, N = 239)

Ethnic Group	3.0 or above	2.9 to 2.0	Below 2.0	Total
	% (N)	% (N)	% (N)	(N)
<u>SDCS Seniors:</u>				
Asian	52.1 88	37.3 63	10.7 18	169
Indochinese	39.6 182	48.0 221	12.4 57	460
Filipino	38.4 134	45.4 159	16.3 57	350
White	34.6 1,232	46.5 1,656	18.9 673	3,561
Hispanic	13.8 122	50.7 448	35.5 314	884
Black	9.4 81	47.7 409	42.9 368	858
<u>IHARP-SARYS:</u>				
Indochinese	40.4 96	45.2 108	14.6 35	239
Vietnamese	53.4 29	33.3 18	13.0 7	54
Chinese-Viet.	48.9 22	33.3 15	17.8 8	45
Hmong	40.4 19	55.3 26	4.3 2	47
Khmer	20.0 7	68.6 24	11.4 4	35
Lao	32.8 19	43.1 25	24.1 14	58

* GPAs (scored as A=4, B=3, C=2, D=1, F=0) exclude grades in Physical Education courses. SDCS data are for all 12th graders in San Diego City High Schools during the 1986-87 academic year; The IHARP-SARYS data are for 7th-12th graders in the IHARP random sample who were enrolled in San Diego City Schools.

were most educated and who came from the urban, professional/technical, upper/middle social classes in their countries of origin would also be those showing the greatest level of educational attainment; and conversely, that those (such as the Hmong) whose parents were largely uneducated, preliterate rural farmers would exhibit the lowest levels of educational attainment. In short, we proposed a social class explanation for the process of refugee youth achievement--the idea that the human capital and class resources of the parents would tend to transfer to their children in the U.S. By this logic, and based both on IHARP findings and those of other regional and national research studies on Indochinese refugees, we expected the Vietnamese to do best in city schools, followed by the Chinese-Vietnamese, then the Lao, the Khmer, and the Hmong. Only in part is this pattern evident from the results shown in Table 3-1.

The Vietnamese, as predicted -- and as reflected in the results of our survey of Valedictorians and Salutatorians reported in Chapter 1 -- exhibit the highest GPAs of any of the Indochinese groups. What is more, a greater proportion of Vietnamese (53.7%) have GPAs above a 3.0 than any other student group in the city, including the high-achieving "Asian" group (52.1%). Also as predicted, the Chinese-Vietnamese follow, with 48.9% having GPAs above 3.0. What is quite surprising is that the next-ranked group are the Hmong: 40.4% of Hmong students had GPAs above 3.0--a higher proportion than any other student group, outperforming majority white Americans as well as Filipinos, Hispanics and Blacks. Not only that, but the Hmong had a smaller proportion of students with GPAs below 2.0 than any other student group in the city, including "Asians" and Vietnamese. Following the Hmong come the Khmer and the Lao. Note in particular that a greater proportion of Lao students (24.1%) are doing poorly (i.e., have GPAs below 2.0) than any other Indochinese group, suggesting (as will be elaborated by other evidence below) that it is the Lao more than the Hmong who may present longer-term problems of adjustment and achievement among the coming generation. At the same time, about a third (32.8%) of Lao students have GPAs above 3.0--only slightly below the proportion for white students--suggesting that, particularly within the Lao group, there may be a **multimodal distribution of achievement**, with some Lao students doing very well and others very poorly. To a lesser extent this phenomenon is observable in the data for the Chinese-Vietnamese, who next to the Lao have a sizable proportion (17.8%) of students falling below a 2.0 GPA criterion.

In any case, this first general finding requires that we modify our original hypothesis: while social class differences still explain much of the patterns of achievement that are observable among Indochinese refugee youth, both between and within ethnic groups, other factors need

to be taken into account to explain the reasons for the lower Lao and Khmer patterns of attainment, and for the much higher than expected patterns of educational attainment among the Hmong youth. Among the principal factors we have identified through our qualitative research are cultural and structural patterns of family organization, and culturally patterned coping strategies. For example, the Vietnamese, Chinese and Hmong all share patriarchal extended family systems built on a Confucian cultural model that strongly emphasizes family discipline, parental authority and filial piety; by contrast, the Khmer and the Lao have common cultural roots that borrow cultural elements more from India than from China, including a similar language and alphabet, similar customs, the same form of Theravada Buddhism, and looser neolocal systems of nuclear family organization. It is possible that all of these factors, and others not mentioned here, may have some causal role in explaining the differential attainment patterns we have discovered, net of social class advantages and resources, and net of the common adaptive context in which the refugee youth must interact. We will address these issues more systematically in Chapter 6.

A question may be raised about the generalizability of the IHARP-SARYS findings beyond the San Diego region and to the national population of Indochinese refugees. In this regard, a very useful comparison may be made between our results and those of the only other study which to our knowledge has provided comparable data on Indochinese educational achievement: the Caplan, Whitmore, et al. (1985) study done by the Institute for Social Research (ISR) of the University of Michigan, in connection to and parallel with the "Southeast Asian Refugee Economic Self-Sufficiency Study" which they had conducted separately under a research contract from the Office of Refugee Resettlement. The ISR study was limited to a sample which included only "second-wave" (post-1978 arrivals) Vietnamese and Chinese-Vietnamese refugees, and only some lowland Lao; however, their study was conducted in five metropolitan locations in the U.S., including Orange County, Seattle, Houston, Chicago and Boston, so that it provides a multiregional scope that IHARP (limited to San Diego County) does not have. The ISR team collected school records for 536 school-aged children (K-12) in about 200 refugee households, and of these they were able to obtain GPAs for 355 secondary-level students. (It is not clear from their published reports to date, however, exactly what the distribution of students in their sample was by grade level, nor the breakdown of their results by ethnic group, gender or location. Also, presumably their data are for "active" or currently enrolled students only, whose GPAs would be higher than those of students who may have dropped out.) Their results for the overall sample, contrasted against ours, are shown in Table 3-2. Here the GPA data are broken down differently than in the previous table, to conform to the ISR presentation of findings.

Table 3-2.

**Cumulative Grade Point Averages (GPA) of Indochinese Students
in Two Regional Studies in the United States, 1985**

(ISR Sample, N=355; IHARP-SARYS Sample, N=239)

SAMPLE/ ETHNIC GROUP	A (3.6-4.0)		B (2.6-3.5)		C (1.6-2.5)		D (1.5 or less)		TOTAL
	%	N	%	N	%	N	%	N	N
ISR Sample *	27.0	96	52.1	185	17.2	61	3.7	13	355
IHARP-SARYS ** Indochinese Sample:	18.0	43	45.6	109	29.7	71	6.7	16	239
Vietnamese	25.9	14	42.6	23	27.8	15	3.7	2	54
Chinese-Viet.	31.1	14	35.6	16	22.2	10	11.1	5	45
Hmong	12.8	6	55.3	26	27.7	13	4.3	2	47
Khmer	5.7	2	57.1	20	34.3	12	2.9	1	35
Lao	12.1	7	41.4	24	36.2	21	10.3	6	58

* ISR sample contains mostly Vietnamese, Chinese-Vietnamese, and some lowland Lao. The data were collected in five locations in the U.S. (Orange County, Seattle, Houston, Chicago, and Boston). These data do not include Cambodian or Hmong students. (Institute for Social Research, University of Michigan, Ann Arbor, 1985)

** IHARP-SARYS sample contains Vietnamese, Chinese-Vietnamese, Lao, Khmer, and Hmong. The data were collected from city schools in the San Diego area.

Again, despite differences in sampling and location, the results are remarkably compatible. Overall, the ISR sample reflects a somewhat higher level of scholastic achievement than that found in our IHARP-SARYS sample. The mean GPA for the ISR sample as a whole was 3.05; the mean GPA for our sample was 2.77. This gap, and the greater proportion of students in the ISR sample recording 'A' grades (GPAs above 3.5)--27% vs. 18% in the IHARP-SARYS sample--is largely explained by the absence of Khmer and Hmong (and very few Lao) in the ISR sample. In fact, looking only at the IHARP-SARYS results for Vietnamese students, the comparison becomes much closer to the ISR results overall. (In some cases, the comparison shows identical results: e.g., in both samples, only 3.7% of the Vietnamese show 'D' grades, or GPAs below 1.5.) The finer breakdown of data in Table 3-2 to permit the depiction of results by separate letter grade levels (A, B, C, < D) also provides a sharper focus both on the particular groups doing very well and those doing very poorly. Here one can see that the Hmong GPAs are clustered at the B to B+ level, whereas the Chinese actually outdo the Vietnamese in the proportion of students scoring at the 'A' level. Also, the data show again that those students doing most poorly are the Lao and, despite the high-achievement of the Chinese at the 'A' level, also a group within the Chinese-Vietnamese sample (11% < D). In any case, these data suggest that our findings are not regionally specific, and thus offer a reasonable basis for generalizing such results on Indochinese educational attainment to the larger refugee population.

Table 3-3 presents cumulative GPAs for each of the five Indochinese ethnic groups in the IHARP-SARYS sample of secondary school students (7th to 12th grade), broken down by gender. Of the 239 secondary school students, 122 are males and 117 females. The mean GPA for the sample as a whole is 2.77, with female students (2.80) doing slightly better overall than male students (2.74), although the difference is not statistically significant. Differences between the mean GPAs of the five ethnic groups are significant ($p < .05$). The Vietnamese have the highest cumulative GPA (2.97), followed by the Chinese-Vietnamese (2.88), the Hmong (2.78), the Khmer (2.64), and finally the Lao (2.57).

Data in Table 3-3 also reveal some interesting patterns by gender within each ethnic group. For example, Vietnamese and Chinese girls (3.07 GPA for both groups) are noticeably outperforming Vietnamese and Chinese boys--and everybody else, for that matter. Hmong boys, however, are noticeably outperforming Hmong girls (2.90 to 2.63)--a difference that has been explained in our qualitative interviews as reflecting the heavy subordination and

Table 3-3.

**Cumulative Grade Point Averages (GPAs)* of Indochinese Students
in San Diego Secondary Schools, by Ethnicity and Gender ****

(IHARP-SARYS Sample, N=239)

ETHNIC GROUP	MALES		FEMALES		TOTAL	
	GPA	N	GPA	N	GPA	N
Vietnamese	2.88	28	3.07	26	2.97	54
Chinese-Viet.	2.70	23	3.07	22	2.88	45
Hmong	2.90	27	2.63	20	2.78	47
Khmer	2.68	18	2.61	17	2.64	35
Lao	2.52	26	2.62	32	2.57	58
Totals	2.74	122	2.80	117	2.77	239

* Cumulative GPAs do not include Physical Education Courses.

** Differences in GPAs between ethnic groups are significant at $p < .05$; overall differences between males and females are not significant.

devaluation of girls in Hmong families and the expectation that girls must attend to house chores first before doing their homework and attending to their schooling. Nevertheless, other evidence suggests that Hmong girls are rapidly making up the difference and catching up with Hmong boys in educational attainment measures. (One issue of concern that we have examined in our interviews and field research concerns the issue of early forced marriages in the Hmong community, and the consequences of this for the educational and occupational prospects of Hmong youth. A discussion of that problem will be elaborated in Chapters 6 and 7.) The differences in GPAs between Khmer and Lao male and female students are rather small and not statistically significant, though Lao girls and Khmer boys show comparatively higher GPAs than their counterparts. Finally, another surprising result in Table 3-3 is that, comparing the cumulative GPAs of male students only across the five ethnic groups, it is the Hmong who score marginally higher (2.90) than the Vietnamese (2.88), followed by Chinese-Vietnamese (2.70) and Khmer (2.68) male students, and then by the Lao (2.52). The GPA data in Table 3-3 is diagrammatically portrayed in Figures 3-15 and 3-16.

A question may also be raised about the nature of the courses in which the Southeast Asian students obtained their grades. Since most of them are LEP students, many will be assigned to ESL (English as a Second Language) classes rather than to regular English classes. It is well known -- as our data on achievement test scores below will also show -- that these students seem to do well in Math, but it is not known how well they do in other types of courses. Also, could there be "grade inflation" from grades obtained in ESL and other non-mainstream classes? To answer these questions, we obtained complete academic histories for all students in our sample, showing each course taken from the 7th grade on and each grade received for that course. We then derived separate cumulative GPAs obtained by the students in each of the following clusters of courses: Math, Science, regular English, ESL English, Social Studies, Foreign Languages, Music and the Arts, Vocational Studies, Physical Education, and miscellaneous others. (Appendix D, in the separate volume of appendices, provides a set of tables containing course-specific GPAs for all of these course clusters by ethnicity and gender.) There is some evidence that GPAs in ESL classes (2.91) are higher than GPAs in regular English classes (2.77), but removal of ESL grades from overall GPAs does not change in any significant way the findings noted earlier, nor the fact that Indochinese students' GPAs are higher than that of most other students in the city schools. Indeed, the Southeast Asians' lowest GPAs are in the areas they generally are known to excel in: Math (2.71) and Science (2.73). These are followed, in order of increasing GPAs, by: regular English courses (2.77) and Social Studies (2.77) -- both of which require a fluent knowledge of English as well as some familiarity with American history and culture; then by Vocational Studies courses (2.85),

Figure 3-15.

**Cumulative G.P.A.'s of Indochinese Students
(IHARP-SARYS Sample, N=239)**

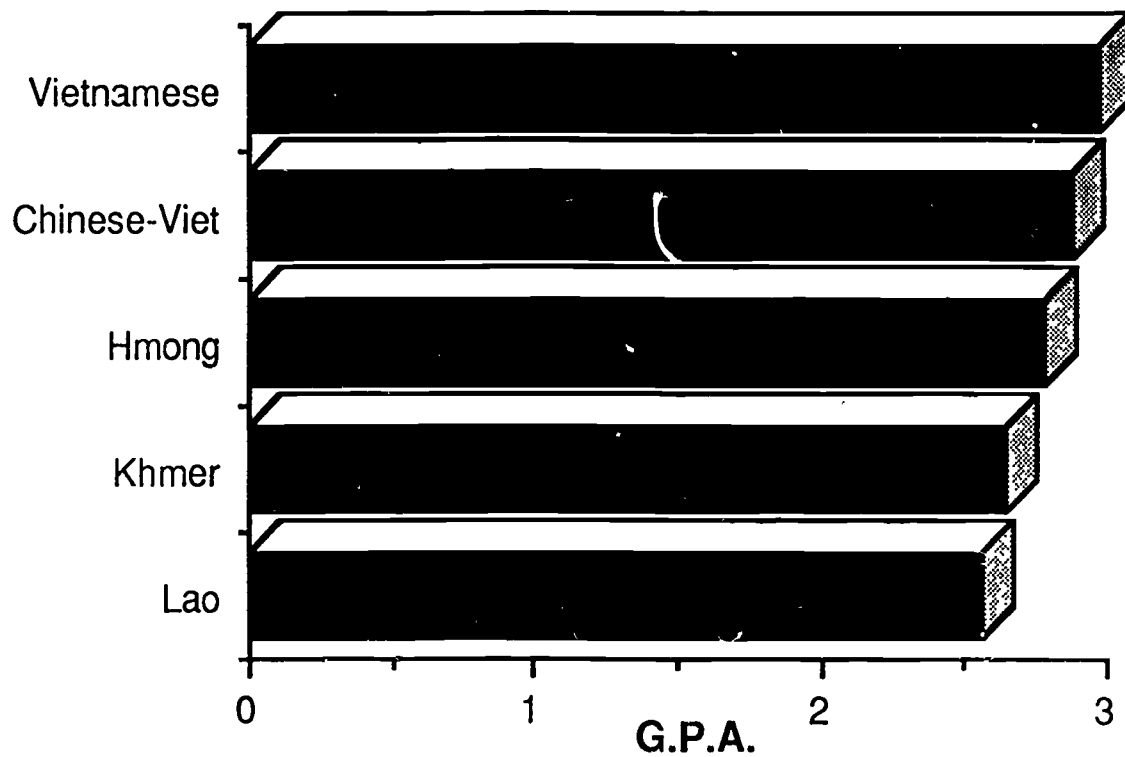
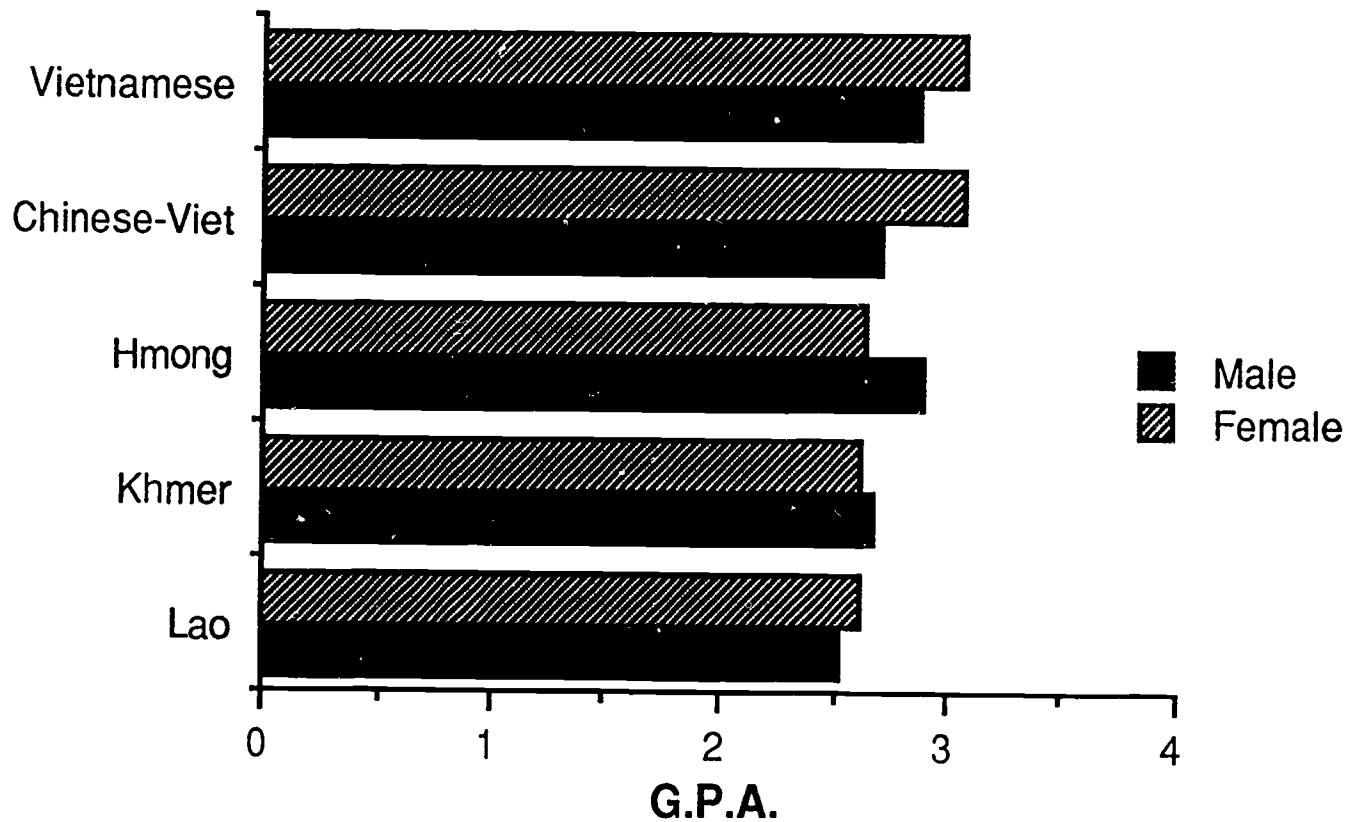


Figure 3-16.

G.P.A.'s of Indochinese Students, by Gender (IHARP-SARYS Sample, N=239)

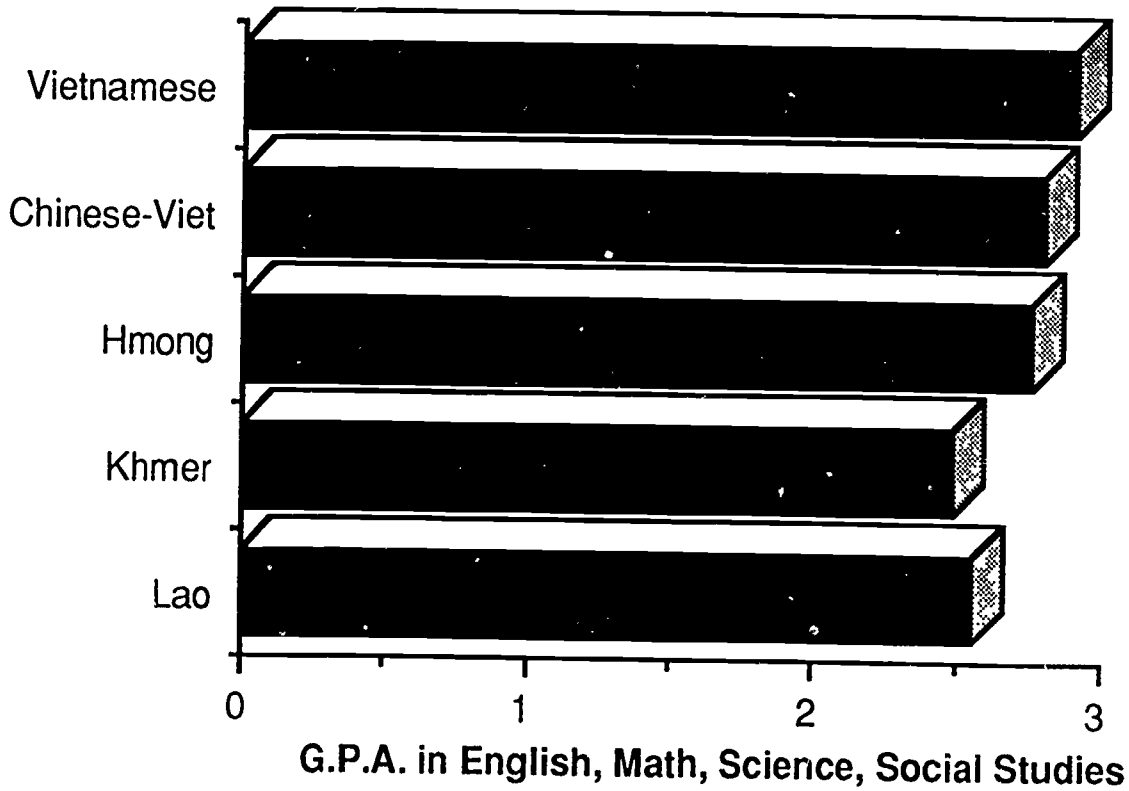


ESL courses (2.91), Music and the Arts (3.01), and finally Foreign Languages (3.12), which is the academic area in which these students do best in terms of GPA.

We also derived a cumulative GPA for core courses only -- that is, courses in Math, Science, regular English, and Social Studies -- which are the four course areas in which these students have lower GPAs. Figure 3-17 shows the ethnic rankings for core-course GPAs. The rankings remain unaltered, with one exception: in core courses, the Lao have a higher mean GPA than the Khmer (who, as the most recently arrived refugees, are also more likely to be assigned to ESL courses -- where the Khmer have a high 2.98 mean GPA, but which we do not count in computing the core-course GPA). **In core courses alone, the Vietnamese have a 2.91 GPA, followed by the Chinese (2.79) and the Hmong (2.76), then by the Lao (2.55) and the Khmer (2.48,**

Figure 3-17.

G.P.A.'s in Core Courses Taken by Indochinese Students (IHARP-SARYS Sample, N=239)



E. CTBS Standardized Achievement Test Scores: Comparative Results.

The San Diego City Schools uses the **Comprehensive Tests of Basic Skills (CTBS)**, a standardized measure which is widely used throughout the U.S., to gauge the educational achievement of students in grades K-12 in city schools. The tests are intended for national use to measure systematically those skills that are prerequisite to studying and learning in school, classified under five broad skill areas: recognition, translation, interpretation, application, and analysis. CTBS was standardized on a large national sample of students from Kindergarten through 12th grade in schools (both public and private) randomly selected from all regions and states of the U.S. (According to the developers of the CTBS, research since 1973 has also been conducted to identify and eliminate any items that appeared to be biased against a particular ethnic or cultural group, through the gathering of separate item data on minority groups and through systematic reviews of the tests for content bias by knowledgeable members of minority groups.) The CTBS battery which is taken by SDCS students contains Reading, Language, and Mathematics tests, which produce raw scores in 7 different areas or subtests: (1) Reading Vocabulary, (2) Reading Comprehension, (3) Language Expression, (4) Spelling, (5) Language Mechanics, (6) Mathematics Computation, and (7) Mathematics Concepts and Applications. These subscale scores, in turn, can be averaged to produce three composite indices of achievement, measuring (1) **Total Reading** (combining the Vocabulary and Comprehension subtests), (2) **Total Language** (combining Language Expression and Language Mechanics), and (3) **Total Mathematics** (combining computation and math concepts and applications). The results of these achievement tests provide data that may be compared nationally with other student groups at similar grade levels. (Note: Appendix F provides tables of data detailing the CTBS test and subtest scores for the 1986-87 senior-junior cohort of San Diego high school students, by ethnic/racial group, gender, LEP/FEP status, and active/inactive status; Appendix G provides similar tables of CTBS scores for the different Southeast Asian ethnic groups in the IHARP-SARYS sample.)

For our purposes in this report, the measure used to present the results are **stanine** scores. The stanine score is derived from the raw CTBS score and standardized into a scale of equal units ranging from 1 to 9. ("Stanine" refers simply to the fact that it is a standard score from a scale of nine units.) The mean stanine of the national norming population is 5 and the standard deviation is 2. Each stanine unit represents approximately one-half of a standard deviation. A stanine of 1 reflects the lowest level (the bottom 4% of test scores nationally), a stanine of 5 is

average (the middle 20%), and a stanine of 9 reflects achievement at the top 4% of scores nationally.

Figure 3-18 compares the Total Reading and Total Math CTBS achievement scores among all of the ethnic/racial groups in San Diego high schools, based on the 1986-87 cohorts of juniors and seniors (N=24,660). In terms of Math scores, the "Asian" students (Chinese, Japanese, Korean) show by far the highest stanine scores, with whites, Filipinos, "other immigrants" and the Indochinese also scoring above the national norm. In terms of Reading scores, however, the Indochinese students show the lowest stanine scores among all the groups in the city, scoring well below the national norm, underscoring the recency of their arrival and their present difficulties in learning the new language.

Table 3-4 presents CTBS test results for the IHARP-SARYS secondary school sample of Indochinese students (N=205). The sample size here is smaller than the sample size reporting GPAs because Limited English Proficient (LEP) students, who of course include a sizable proportion of the recently arrived refugees, are not given the CTBS tests until their level of English is deemed minimally adequate; as a result, some Indochinese LEP students have not yet been given the CTBS tests. The test scores used here are based on the most recent test taken by the student and recorded in his/her SDCS Cumulative Student Record. Table 3-4 shows test results in each of the 7 subscales and in each of the 3 composite indices.

The test results in Table 3-4 have been rank-ordered to indicate the pattern of achievement and of problems in test areas exhibited by Indochinese students. Clearly, these students excel in mathematics overall: the mean stanine score for the Mathematics Computation subscale (6.84) puts the Indochinese as a whole in the top quartile nationally in the U.S. This is followed by Math Concepts and Applications (5.32), Language Mechanics (5.05), Spelling (4.85), Language Expression (4.12), Reading Comprehension (3.51), and lastly Reading Vocabulary (3.16)--this last score putting the Indochinese students as a whole in the bottom quartile nationally, reflecting their difficulties in learning and becoming proficient in a new language, a new alphabet, and a new culture. Indeed, the sequence of achievement indicated by these scores--and the pattern is the same for all ethnic groups and for males and females--reflects a progression from the most "subjective," culture- and language-bound basic skills tested, requiring the greatest familiarity and "intimacy" with the host culture (such as vocabulary, reading comprehension and language expression), to the most "objective," rule-bound and universally-applicable (i.e., the least culture- and language-bound) skills, moving from spelling and language mechanics to math application and math computation (this last area

Figure 3.18.

Reading and Math Achievement Test Scores

(San Diego HS Seniors and Juniors, N=24,660)

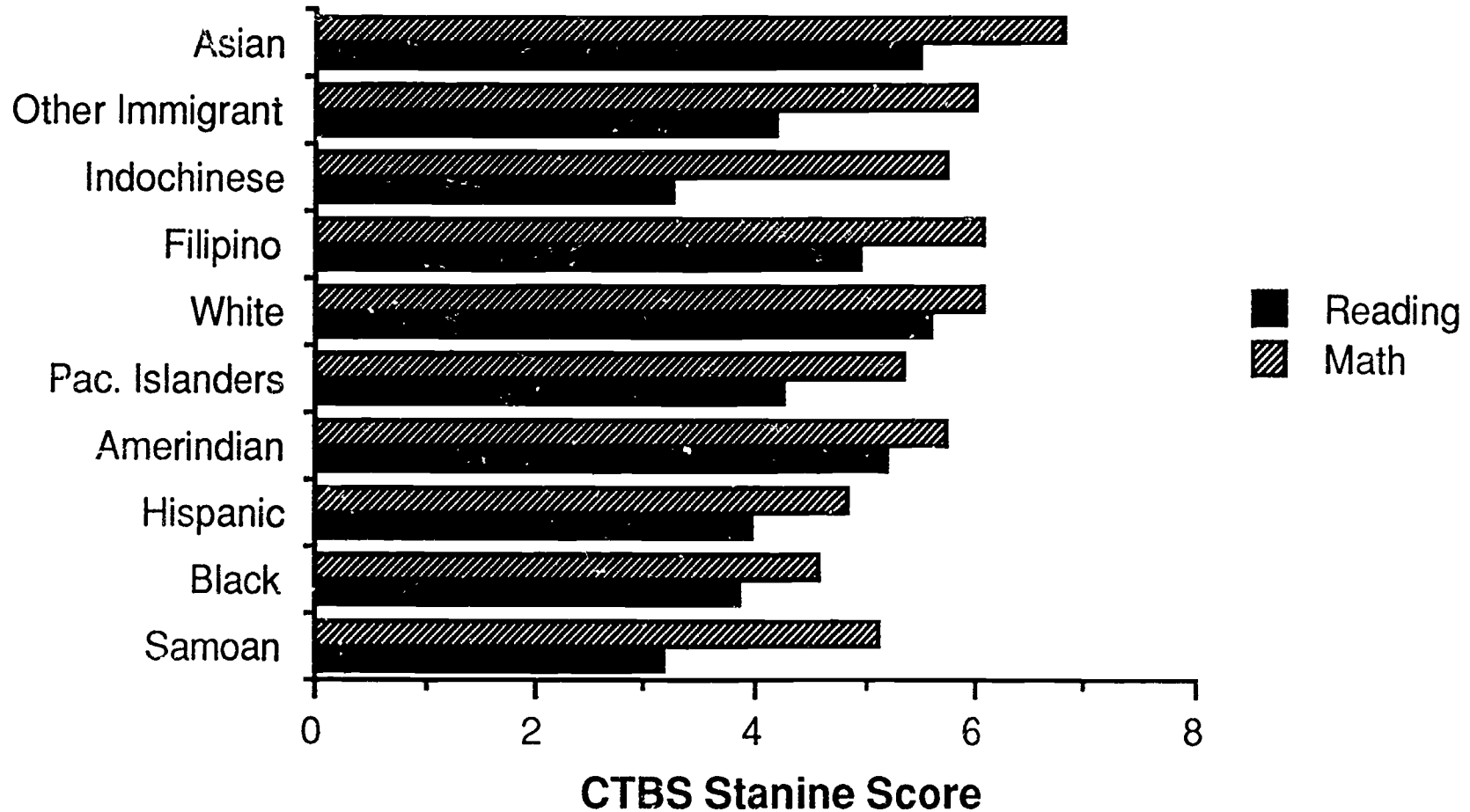


Table 3-4.

**CTBS Standardized Achievement Test Scores, in STANINES,*
of Indochinese Students in San Diego Secondary Schools,
by Ethnicity and Gender ****

(IHARP-SARYS Sample, N=205)

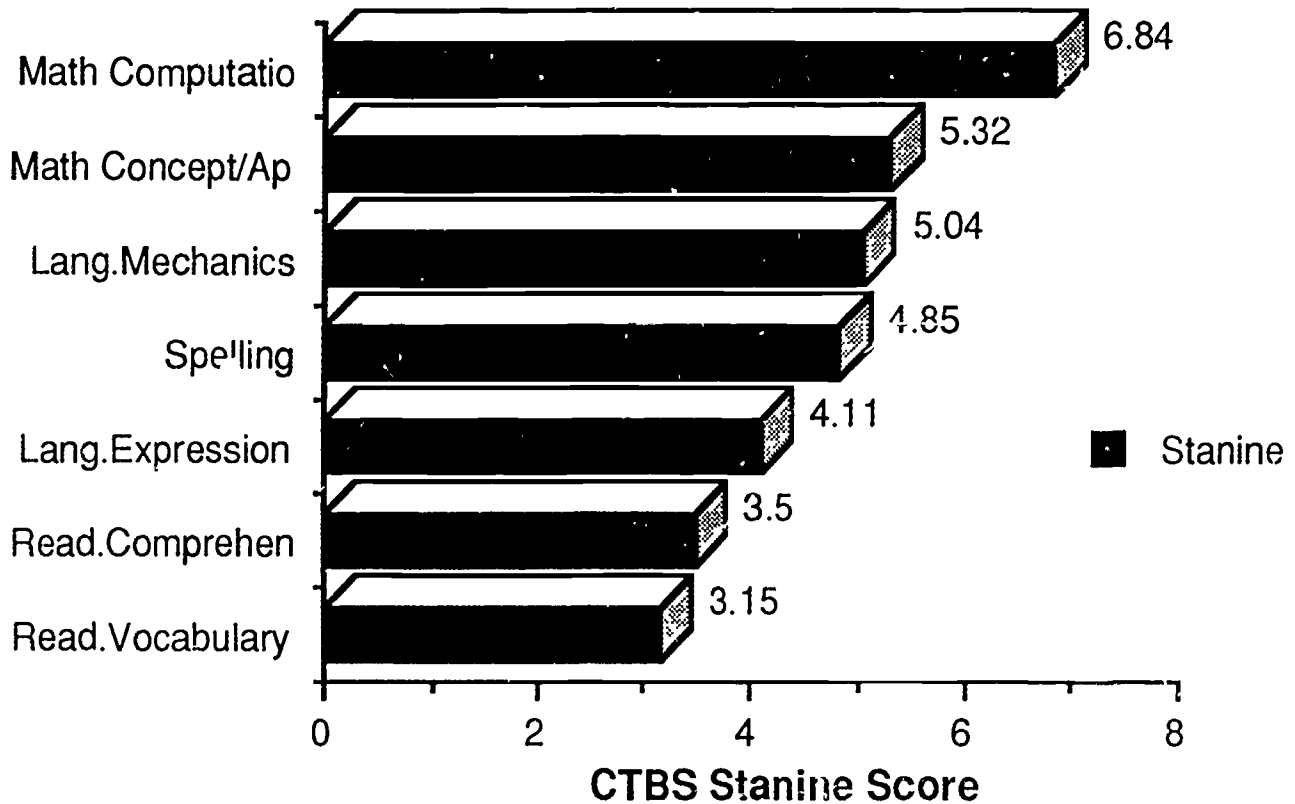
CTBS Subscales & Composite Indices	ETHNICITY					GENDER		TOTAL
	Khmer (N=24)	Lao (N=49)	Hmong (N=41)	Chinese (N=43)	Viet. (N=49)	Male (N=108)	Female (N=97)	
Mathematics Computation	5.92	6.27	6.46	7.58	7.53	6.93	6.75	6.84
Math Concepts & Applications	3.71	4.65	5.00	6.07	6.41	5.46	5.16	5.32
Language Mechanics	4.10	4.45	5.05	5.44	5.68	5.04	5.05	5.05
Spelling	4.24	4.19	4.45	5.54	5.47	4.94	4.76	4.85
Language Expression	3.19	3.58	4.10	4.41	4.77	4.00	4.24	4.12
Reading Comprehension	3.15	3.07	3.00	3.60	4.42	3.42	3.61	3.51
Reading Vocabulary	3.45	2.48	2.92	3.31	3.73	3.21	3.11	3.16
Total Math	4.81	5.48	5.73	6.82	6.97	6.19	5.96	6.09
Total Language	3.84	4.11	4.49	5.16	5.31	4.68	4.68	4.68
Total Reading	3.30	2.78	2.96	3.49	4.07	3.34	3.36	3.35

* The "stanine" score (a standard score from a scale of nine units) is derived from CTBS raw scores and standardized into a scale of equal units ranging from 1 to 9. The mean stanine for the national norming population is 5 and the standard deviation is 2.

** Differences between ethnic groups are significant at the $p < .001$ for all measures; differences by gender are **not** significant for any measure.

Figure 3-19.

CTBS Achievement Scores in Seven Test Areas (IHARP-SARYS Sample, N=239)



being the clearest example of objective rule-bound skills). Figure 3-19 vividly summarizes this progression in achievement test scores.

Further observation of the longitudinal data on CTBS tests taken by the Indochinese students in our sample suggests that math achievement scores are remaining relatively stable over time, while achievement in reading and language skills reflect significant improvement over time as the refugee students increasingly become proficient in English. That is, the achievement levels reflected in Table 3-4 are not indicative of a static pattern, but one that appears to be improving rapidly over time. At this point in time, the Indochinese appear to be well above national achievement norms in math, at about the average level nationally in language mechanics and spelling, below the national norms in language expression, and well below the national norms in reading comprehension and vocabulary.

The differences in CTBS stanine scores are not statistically significant by gender for any of the subscales or indices, although males tend to do slightly better than females in math skills and spelling, and females tend to do slightly better than males in language expression and reading comprehension. However, all differences between ethnic groups are significant for all measures ($p < .001$). Again the Vietnamese reflect the highest overall achievement scores, in both math and language skills, although they were edged slightly by the Chinese in math computation and spelling. The Chinese-Vietnamese come next in overall achievement test scores, followed by the Hmong, the Lao and the Khmer. The pattern is nearly identical to that observed with GPAs, with a couple of exceptions. First, the Lao reflect a higher level of ability in math and language test scores than the Khmer. The fact that the Lao reflect the lowest GPAs but not the lowest CTBS skill scores deserves explanation, and it may reflect, for example, motivational dynamics and/or cultural patterns of family organization, or perhaps it is in part a function of the "bimodality" of achievement we have observed among the Lao; however, such an explanation is likely to be complex and multidimensional, and will require intensive ethnographic research with the Lao (who were not included in the SARYS qualitative interviews). The Khmer, in particular, do significantly worse in math than the other groups; in fact, the Khmer are the only group with composite total math stanines below the national norm of 5. However, this is due to deficiencies in the math concepts and applications test area (where their score is a very low 3.71), which consists of word problems requiring a fluent knowledge of English; by contrast, the Khmer's stanine scores for math computation are a much higher 5.92--though still below any of the other groups. The Lao show the lowest achievement scores among all the groups in vocabulary, total reading, and spelling. The Hmong, though they rank third in most other measures, rank last in reading comprehension

and fourth among the five groups in vocabulary and total reading, possibly reflecting, in part, the very high illiteracy levels of their parents. Figure 3-20 contrasts these ethnic differences in CTBS scores for the Reading, Language, and Math composite indices.

How do the achievement levels of the Southeast Asian students rank nationally? Table 3-5 presents CTBS results for the Indochinese sample, but now showing the achievement levels of the refugee students compared against U.S. national percentile rankings. The table focuses on results in the three CTBS composite indices (Math, Language and Reading), and permits us to identify the proportion of Indochinese students, by ethnic group, who are scoring in the 90-to-99th percentile nationally, in the lowest decile nationally, in the middle 20%, or in above-average (60-to-90th percentile) or below-average (10-to-40th percentile) ranks nationally. The data dramatize particularly the impressive achievement levels of the Vietnamese: **almost half of all Vietnamese students (49%) are in the top 10% nationally in math skills, and four out of five Vietnamese students (as well as three out of four Chinese-Vietnamese students) are in the top 40% (or above-average) in the U.S. in math skills.** In fact, for the sample as a whole, nearly 90% of the Indochinese students demonstrate average-or-better math skills relative to American students nationally. Again these data reflect that of all the Indochinese groups, it is the Khmer who are doing more poorly in math abilities--although the Khmer nonetheless reflect achievement skills in math that are roughly average by U.S. norms. By contrast, scores in Language and Reading reflect the present deficiencies of the refugee students in these skills. In fact, the Total Reading scores show that three out of four Indochinese students are in the bottom 40% (or below-average) nationally, while fewer than 10% are in the top 40%--reflecting, of course, the fundamental problems of learning a new language, problems which our data also show are being rapidly overcome by these young immigrants.

Finally, Table 3-6 presents the mean overall national percentile rankings achieved by each of the ethnic groups in each of the CTBS subtests and composite indices. Here we have increased the sample size (N=245) to include all Southeast Asian students in the IHARP-SARYS sample who took the CTBS at any grade level from grades 4 to 11, since, after the third grade, the standardized form of the CTBS permits equivalent comparisons of raw scores and percentile rankings, adjusted by grade level. The data in Table 3-6 do not change the previously discussed findings, but permit the use of the CTBS data in a more interesting and useful way for comparative purposes.

Figure 3-20.

Achievement Test Scores of Indochinese Students (IHARP-SARYS Sample, N=239)

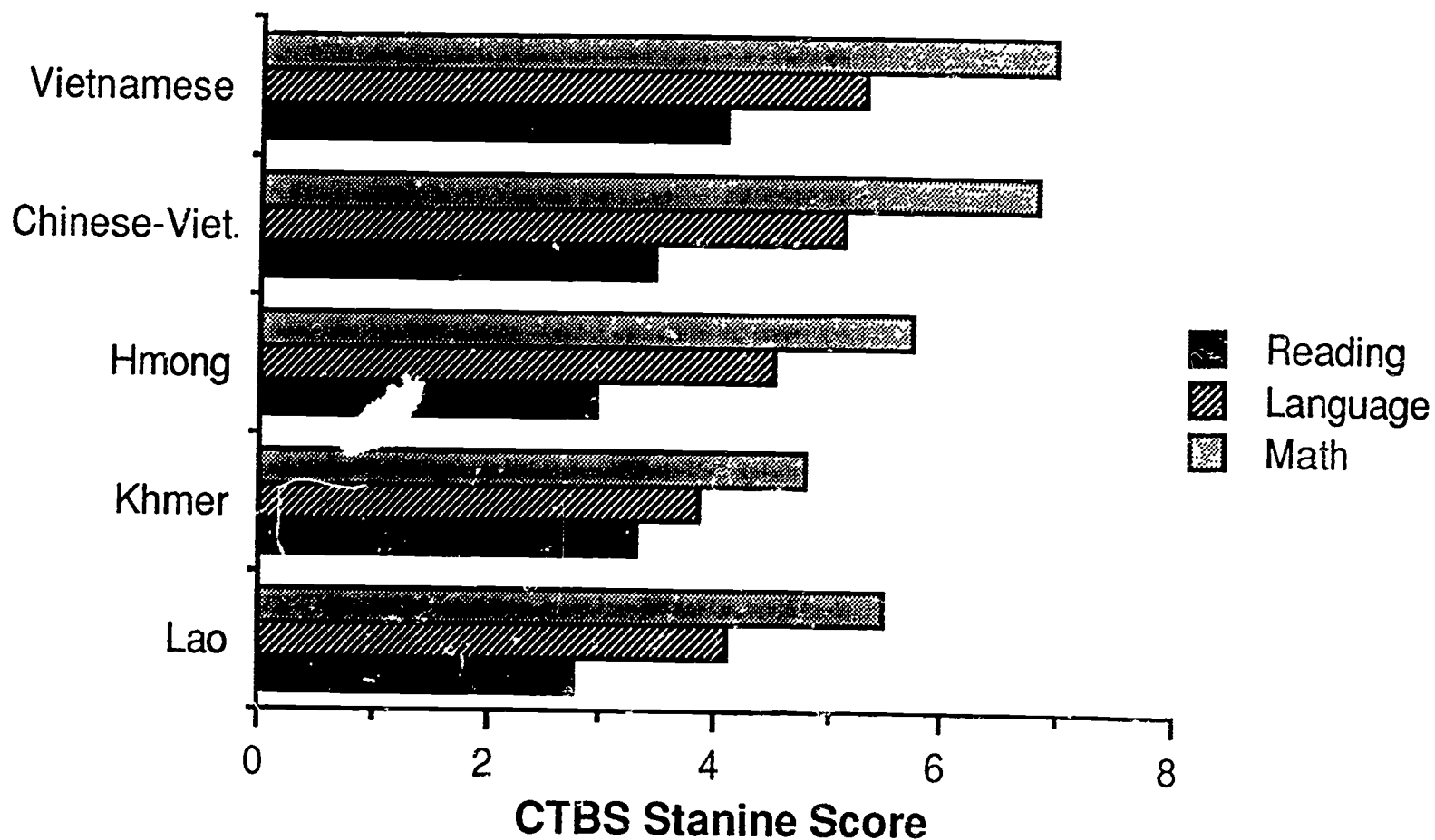


Table 3-5.

**National Rankings in CTBS Achievement Test Scores
of Indochinese Students in San Diego Secondary Schools,
for Total Reading, Total Language, and Total Mathematics
Composite Indices, by Ethnicity**

(IHARP-SARYS Sample, N=205)

CTBS Composite Index	National Percentile Ranking (%)	ETHNICITY					TOTAL (N=205)
		Khmer (N=24)	Lao (N=49)	Hmong (N=41)	Chinese (N=43)	Viet. (N=49)	
Total Math:	90-99	4.2	12.5	9.8	39.5	49.0	25.4
	60-90	25.0	27.1	43.9	34.9	30.6	32.7
	40-60	37.5	45.8	34.1	18.6	10.2	28.3
	10-40	29.2	10.4	9.8	7.0	8.2	28.3
	1-10	4.2	4.2	2.4	0.0	2.0	2.4
Total Language:	90-99	4.8	4.8	7.9	14.6	21.3	11.6
	60-90	9.5	16.7	21.1	26.8	17.0	19.0
	40-60	23.8	9.5	18.4	24.4	23.4	19.6
	10-40	42.9	59.5	50.0	31.7	36.2	43.9
	1-10	19.0	9.5	2.6	2.4	2.1	5.8
Total Reading:	90-99	5.0	0.0	0.0	2.4	4.2	2.1
	60-90	5.0	0.0	2.6	7.3	18.8	7.3
	40-60	10.0	15.9	15.4	17.1	22.9	17.2
	10-40	50.0	47.7	46.2	53.7	37.5	46.4
	1-10	30.0	36.4	35.9	19.5	16.7	27.1

Table 3-6.

**National Percentiles in CTBS Standardized Achievement Test Scores
of Indochinese Students in San Diego City Schools,
Grades 4 to 11, by Ethnicity and Gender ***

(IHARP-SARYS Sample, N=245)

CTBS Subscales & Composite Indices (%)	ETHNICITY					GENDER		TOTAL
	Khmer (N=23)	Lao (N=58)	Hmong (N=54)	Chinese (N=47)	Viet. (N=63)	Male (N=141)	Female (N=104)	
Mathematics Computation	73.6	72.2	78.8	84.0	86.9	80.0	79.6	79.8
Math Concepts & Applications	42.2	50.3	51.5	67.4	70.7	57.7	59.2	58.4
Language Mechanics	38.4	46.0	50.4	56.8	62.2	48.8	57.4	52.6
Spelling	54.7	43.2	41.7	60.5	59.3	49.4	53.5	51.2
Language Expression	30.6	32.0	34.3	44.1	49.6	36.0	43.5	39.3
Reading Comprehension	23.5	26.1	28.6	36.9	41.9	30.3	35.9	32.7
Reading Vocabulary	25.6	20.3	18.7	30.5	35.5	26.9	25.7	26.4
Total Math	56.3	61.9	65.9	76.1	80.4	69.8	69.8	69.8
Total Language	34.0	39.1	43.2	51.1	57.4	42.1	52.5	46.7
Total Reading	25.5	22.6	22.9	33.8	38.6	28.1	30.9	29.3

* Differences between ethnic groups are significant at $p < .001$ for all means; differences by gender are only significant (at $p < .05$) for Language Mechanics, Language Expression, and Total Language scores.

F. Determinants of Educational Attainment: A Multivariate Analysis.

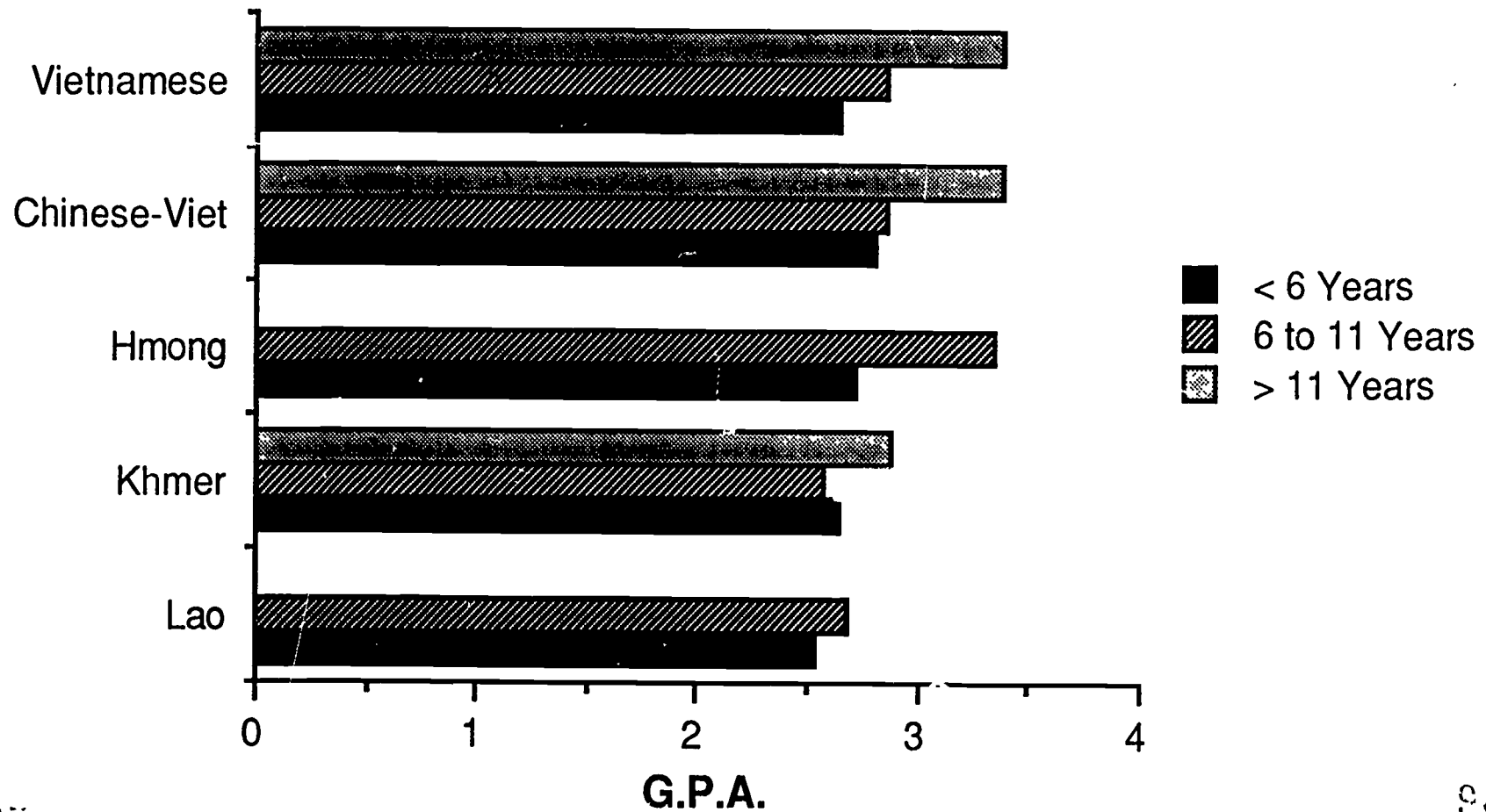
We noted earlier that the principal strength of the IHARP-SARYS sample is that it permits us to link the SDCS objective data on educational attainment outcomes (such as GPAs and CTBS scores) to the large IHARP data set, which contains in-depth survey data on the parents (both father and mother, where applicable), families and households of these Indochinese students, including complete migration and resettlement histories. This, in turn, allows us to carry out very detailed analyses of the correlates and predictors of academic success or failure among refugee youth, moving from **bivariate** to **multivariate** analyses of the effects of a wide range of independent variables on educational achievement.

[*Note: See Appendix E and Appendix H, respectively, in the separate volume of appendices, for tables of data on correlates of GPAs and CTBS test scores. And see Appendix I for a list of the means and standard deviations of all main predictor variables -- including student, parent and household characteristics, including separate variables for fathers and mothers -- plus a correlation matrix listing all zero-order correlations (Pearson's r) between these predictor variables and the outcome variables of GPAs and CTBS math, reading and language achievement test scores.*]

Looking first at bivariate results, we have already indicated the very significant effect of **ethnicity** on educational attainment. Now, ethnicity *per se* ("being Hmong," or "being Vietnamese," or "being Khmer") is a variable that subsumes complex socioeconomic and psychocultural realities, some of which we will attempt to describe in the qualitative case histories and analyses sketched in later chapters. In part, ethnicity reflects the different social class and urban/rural backgrounds of these groups, which in turn affect children's educational achievement. Figure 3-21, for example, shows how student GPAs increase as the level of their **parents' education** increases, for each of the ethnic groups. In part, ethnicity reflects different religions, family systems, and ways of life. For example, there are significant differences in student GPAs by **religion**: GPAs are highest (3.23) in those 8% of families where the parents adhere to no religion (who also tend to be more secularized and educated); next come those whose parents are Mahayana Buddhists, the form of Buddhism adhered to by the Vietnamese and Chinese (2.99); then by Catholics (2.73); then by Theravada Buddhists, the form of Buddhism adhered to by the Khmer and Lao (2.60); and finally by those with mixed religions or who are recent converts to Mormon or Christian sects (2.50). In part, too, ethnicity reflects the fact that higher student GPAs are associated with **length of time in the**

Figure 3-21.

**Indochinese Student G.P.A.s by Level of Parents' Education
(IHARP-SARYS Sample, N=239)**



U.S., and that the different ethnic groups have been in the U.S. for varying lengths of time. But it is clear that Vietnamese and Chinese students are doing much better than Khmer and Lao students, with the Hmong occupying a middle position between those four groups.

Family/household size was not correlated with academic outcomes. **There is no evidence to suggest that small family size is associated with improved academic performance.** Indeed, our qualitative interviews indicate that large families, especially among the Vietnamese, are well organized and highly disciplined, and can function effectively as a "mini-school" system, with older siblings serving as tutors to the younger ones and learning better themselves in the process of teaching. (On this point, see the analysis of family contexts in Chapter 6, and especially the case histories available in a separate volume.)

Moreover, we note that there are strong and significant associations between students' GPAs and a variety of socioeconomic characteristics of their parents and households. For example, high GPA students (> 3.0 GPA) are much more likely to live in 2-wage-earner families; indeed, by T2, three out of four high GPA students lived in such households (although only 10% of Indochinese families consisted of 2-wage-earner families), and one out of four students with average GPAs (between 2.0 and 2.9) lived in 2-wage-earner families. Not a single student with low GPAs (< 2.0) lived in 2-wage-earner families. Only part of this effect is due simply to the presence of two parents in the home -- though it is also clear that students in single-parent (typically a widowed mother) households reflect GPAs and achievement scores that are significantly below those of students in two-parent families.

Similarly, high GPA students are much more likely to reside in homes owned by the parents, and in families that receive no public assistance and who reflect higher annual incomes from jobs--though the income-to-needs ratio of these families put them just above the federal poverty line. By contrast, low GPA students live in families who are more dependent on welfare assistance and whose total annual incomes from all sources fall about 20% below the federal poverty line. However, the effect of poverty on educational outcomes is not a linear one, since students with average GPAs live in the poorest households, with income-to-needs ratios about 25% below the poverty line. As we will see later in the multivariate results, income and poverty variables tend **not** to be strong predictors of academic performance when other variables are controlled.

Looking at the relationship of selected characteristics of fathers and mothers on their children's scholastic achievement, the most salient finding is that **it is the mother's and**

not the father's human capital resources that are most strongly associated with the children's GPAs and achievement test scores. These associations are strongly linear. The higher the pre-migration education of the mother, the higher the pre-migration occupational status of the mother, the higher the level of English proficiency of the mother (pre-arrival, at T1 and at T2), and the more time the mother had been employed in the U.S., the higher the students' GPAs. A similar pattern was evident for the father, but the effects were weaker and less significant.

Similarly, **it is the mother's rather than the father's psychological well-being that is most strongly associated with the educational performance of their children.** In fact, zero-order correlations show no association at all between the father's level of psychological depression and the children's GPAs or any of their CTBS scores. However, particularly at T2, the mother's level of depression is strongly related to their children's GPAs, and to a lesser extent to the CTBS reading and language test scores. This is all the more remarkable when one considers that the psychological measure was taken no later than mid-1984, while the GPA is a cumulative measure of grades in courses taken through 1985-86. There is no bivariate relationship evident between either parent's psychological state and the children's CTBS math scores. In general, this finding points to the key role of Southeast Asian mothers in the socialization, supervision and education of their children.

In order to clarify the independent effect of these correlates of educational attainment, and to eliminate possibly spurious relationships, we have run a series of multiple regressions, controlling for a variety of independent variables. In these runs, we have examined their effects on several dependent variables; for our purposes here we will focus on preliminary results of regressions on cumulative GPAs and on the three CTBS composite indices: those for Math, Language and Reading.

Before proceeding to consider the effect of those independent variables, it should be noted that we also looked at the effect of CTBS skill scores on GPAs, to assess the extent to which a measure of individual "ability" (CTBS) explains an outcome that also requires "effort" and teacher evaluations (GPA): we found that **the Total Math score on the CTBS is the principal predictor of GPA by far, accounting by itself for 44% of the explained variance in GPAs; the Total Language score contributes an additional 3% to the explained variance, but the Total Reading score, which is the skill area where the refugee youth do worst, has no effect on GPA outcomes.** This finding generally corresponds to what we found for the large senior-junior

cohorts (N=24,660): namely, the CTBS Math score is the principal predictor of GPA for the cohorts as a whole, and for each of the different ethnic groups, except for Blacks (for whom the CTBS Language score is the principal predictor of GPA). The percent of the variance in the GPA explained by the Math score ranged from a low of about 25% for Hispanics, to about 35% for whites and Filipinos, to over 45% for Indochinese, Asians, and other immigrants.

In a first series of runs, we looked simply at the effect of characteristics reported in the students' school record (e.g., their age, credits earned, semesters in school at the secondary level, ethnicity, and presence of one or two parents in the household). Next we began adding to the model a set of variables derived from the IHARP data set.

Examining first only the effect on GPAs of basic student characteristics, the three main predictors were: age of the student (the younger, the higher the GPA); number of semesters in school at the secondary level (the more semesters, the higher the GPA); and Lao ethnicity (entered as a dummy variable), indicating a significant **negative** effect on GPA outcomes. These same three predictors also entered the regression equations predicting the CTBS Total Language and Total Reading scores: in addition, Vietnamese ethnicity emerged as a positive predictor of Total Reading scores (reflecting the significantly greater level of English proficiency among Vietnamese students, who include among them many "first wave" refugees as well); and having two parents at home emerged as a significant predictor of Total Language scores (probably reflecting the importance of parental supervision, discipline, "push" and support in shaping educational outcomes). The two predictor variables of age and number of semesters--which consistently enter all of our regression equations--indicate that **student GPAs as well as CTBS achievement scores are increasing with time in the schools, and moreover that the younger refugee students coming up appear to be achieving at a higher level than their older siblings or peers.** A similarly simple model examined the effect of these variables on the CTBS Total Math score, and five main predictors were identified, accounting for 31% of the variance: again age and semesters emerge as positive predictors of higher achievement scores, but now followed by Vietnamese, Chinese, and Hmong ethnicity--all three having a significant **positive** effect on Total Math scores, confirming the descriptive findings reported previously. **In general, these results confirm the effect of ethnocultural background on academic success: being Vietnamese, Chinese and Hmong has a positive effect on outcomes, while being Lao or Khmer does not, net of age or length of time in the schools.**

Next we began to enter a series of independent variables drawn from the IHARP data set, including a wide range of household variables (e.g., size and composition), age and pre-migration socioeconomic status of the parents, religion, migration life events, refugee camp experience, time in the U.S., and T1 and T2 measures of the occupational, economic, cultural and psychological adaptation of each parent in the student's household. The results are quite suggestive, and in several respects they lend support to the findings recently reported by Caplan et al. (1985) in their ISR study.

A consistent finding is that almost without exception, socioeconomic characteristics of the father fail to enter any of our regression equations. The only exception in this regard -- and then only as a relatively weak positive predictor of CTBS Total Reading and Total Language scores -- is the father's level of pre-arrival English literacy (which of course also reflects in part his pre-migration level of education). Instead, **it is the mother's socioeconomic resources as well as psychological status that most significantly influence student performance in the schools.** In particular, the mother's pre-migration level of education is the strongest predictor of Total Math scores in our models; the mother's current level of English literacy is the strongest predictor of GPAs, and it is also significantly associated with higher CTBS Reading and Language (but not Math) scores; also, the mother's level of employment in the U.S. emerged, at T1, as the strongest predictor of students' CTBS Reading and Language scores. Moreover, the mother's level of psychological/emotional depression was negatively associated with all student achievement outcomes at T2: the more depressed the mother, the lower the student GPAs and the lower their CTBS scores.

In addition to the above, several other variables enter the multivariate equation as significant predictors of student achievement, controlling for the students' age and number of semesters in school. First, the number of adults in the household is positively associated with higher GPAs and achievement test scores. Second, and not surprisingly, the number of years in the U.S. is a significant predictor of CTBS Reading and Language scores (though not of GPAs or CTBS Math scores). Third, the number of months spent in refugee camps is negatively associated with CTBS Reading and Language scores (though again, not with GPAs or CTBS Math scores). And fourth, Khmer ethnicity enters consistently as a negative predictor of Math skills, confirming the apparent deficiencies of Cambodian students in this area.

Next, we entered into our models a set of items measuring (at T1, in mid-1983) the parent's level of agreement or disagreement with a range of cultural values and options, some expressing a strong affirmation of traditional cultural values and ethnic identity, others

expressing a strong commitment to return to the homeland, and others expressing their stance toward American acculturation and marital assimilation. After factor analyses of these items, six items were summed and averaged for both fathers and mothers to create an overall index of parents' cultural values. We then tested the effect of these cultural attitudes on educational achievement. Some of the results parallel findings reported by the ISR study (Caplan et al., 1985), and some of the results connect interestingly to the recent analysis of "ethnic resilience" suggested by Portes and Bach (1985). That is, we found that the more strongly held were traditional values and a sense of ethnic pride and identity, and the more the parents sought to stick together socially and culturally with co-ethnics here while realizing that they would not return to the homeland even if there were a change in government there, and the more convinced were the parents (both mothers and fathers) that as Southeast Asians they would never have equal status with Americans in the U.S., the higher the GPAs attained by their children. Conversely, the less traditional were the parents in their cultural emphases and the more receptive to "American" acculturation and marital assimilation, the lower the GPAs. A similar though weaker effect of these cultural attitudes on CTBS scores was observable as well. These results may suggest the motivational role of ethnic pride and resilience, self justification, and determined effort exemplified consensually by both parents within a cohesive family structure, as well as undermine the familiar notion that "Americanization" in cultural attitudes and values is a prerequisite for success in American society. On the contrary, and ironically, the opposite may very well be the case.

Table 3-7 presents a summary of our most parsimonious regression models, predicting three outcome variables: GPA, CTBS Math score, and CTBS Reading score. The sample here is restricted to senior high school students (grades 9 to 12), excluding junior high students in order to insure comparability of coursework, grading procedures and expectations, experience at the secondary school level, and test levels. The models account for 39% of the variance in GPAs, 47% of the variance in the Math test scores, and 42% of the variance in the Reading test scores (R squared). While that suggests that the models have considerable explanatory power, it is well to note that more than half of the variance in each case remains "unexplained" by the selected predictor variables, implying the existence of other causal factors not captured by our data. Four sets of predictor variables were entered into each of the equations in this order: (1) **ethnicity**, (2) **age and time**, (3) **parents' socioeconomic status**, and (4) **parents' psychocultural status**. In the first set we included dummy variables for Lao, Khmer and Hmong ethnicity (students from Vietnam were the reference group). In the second set were included the student's age, years in the U.S., and semesters in U.S. secondary schools. In the third set were included two "objective" variables: the number of parents currently employed in

Table 3-7.

Predictors of GPA and of CTBS Math and Reading Achievement Test Scores:
Results of Multiple Regression (Ordinary Least Squares) Analyses †

(IHARP-SARYS High School Sample, Grades 9-12, N=178)

Analytical Category	Predictor Variables	GPA		MATH		READING	
		Beta	ΔR^2	Beta	ΔR^2	Beta	ΔR^2
Ethnic Group:	Lao	-.206 **		-.334 **		-.185 *	
	Khmer	-.013 NS	.059 *	-.357 **	.239 **	-.073 NS	.091 **
	Hmong	-.114 NS		-.267 **		-.099 NS	
Student's Variables: Age and Time in US	Age (Years)	-.422 **		-.377 **		-.233 **	
	Years in US	-.055 NS	.185 **	.000 NS	.127 **	.358 **	.265 **
	Semesters (in US High Schools)	.381 **		.173 *		.068 NS	
Parents' Socio-Economic Status:	Employment	-.022 NS		.115 NS		.026 NS	
	Education/English Literacy	.086 NS	.024 *	.206 **	.068 **	.256 **	.040 **
Parents' Psycho-Cultural Status:	Cultural Values	.347 **		.204 **		.173 *	
	Depression of Mother	-.137 *	.121 **	-.025 NS	.036 *	.016 NS	.024 *
Total Explained Variance (R^2)			.389		.470		.421

† Beta = standardized regression coefficients; ΔR^2 = change in the R squared or "explained variance" in the dependent variable due to each of 4 sets of predictor variables. Each set was entered in the order shown: first the set of 3 ethnic group variables, followed by the set of 3 student age/time variables, then the set of parents' objective characteristics (SES), and finally the set of parents' subjective (psycho-cultural) variables. Betas shown are the final coefficients, with all 10 predictor variables entered in the regression equation. Significance levels for Betas and for changes in R squared, as indicated, are:

** Significant at $p < .01$
 * Significant at $p < .05$
 NS: Not Significant

the student's family, and a measure of both parents' level of education. (Because of multicollinearity between parents' education and other SES measures, only one such measure was employed. In the regressions on GPA and Math scores, the mother's level of English literacy was used as a more predictive variable than parents' combined education, which was used only in the regression on Reading scores.) Finally, in the fourth set were included two "subjective" variables: the index of parents' cultural values, and the level of psychological depression of the mother. The data in Table 3-7 provide the change in R squared (or amount of variance "explained") accounted for by each set of predictor variables, the Betas (or standardized regression coefficients) for each variable after all variables are entered in the model, and the levels of statistical significance of the Betas and of the changes in R squared.

Turning to the results shown in Table 3-7, we note that **ethnicity** is most strongly predictive of CTBS Math scores, accounting for 24% of the variance in Math scores alone, while it accounts for 9% of the variance in CTBS Reading scores, and only 6% of the variance in GPA. Hmong and Khmer ethnicity are not significantly associated with either GPA or Reading scores, but they are significant negative predictors of Math scores when all other variables are controlled. Khmer ethnicity is the ethnic variable most strongly negatively associated with Math outcomes. Lao ethnicity is consistently a significant negative predictor of all three outcome variables, and it is a particularly strong negative predictor of GPA.

The set of **age and time** variables is most strongly predictive of Reading achievement test scores, as might be expected, accounting for more than a quarter of the variance in the outcome variable. What predicts reading ability in English especially is time in the U.S. (the longer the better) and age (the younger the better). [Interestingly, the IHARP study found that these two variables (along with pre-migration education) are also the key predictors of English reading and writing proficiency among Southeast Asian adults (see Rumbaut, 1988 in press)]. This set of variables accounts for 18% of the variance in GPA, and 13% of the variance in Math scores. The age of the student is significant in all cases. But time in the U.S. has a different effect--and meaning--depending on age at arrival. Indeed, based on our ethnographic work, we can add that the key difference involves those youths whose age at arrival was pre-puberty vs. those who arrived post-puberty (or roughly younger than 11 or older than 15 at arrival in the United States). The older students (post-puberty at arrival) are more handicapped by language deficiencies, and they have had less time to "learn the ropes" of the new system; whereas the younger ones (pre-puberty at arrival) are not so handicapped, given the fact that a greater proportion of their lives has now been spent in the U.S. The number of semesters spent in U.S. secondary schools is especially predictive of GPA, however, rather than achievement test

scores -- suggesting perhaps that experience with U.S. teachers and a process of "learning the ropes" in U.S. schools lead to improved grades. However, as we will argue in our qualitative analyses below, this finding that educational achievement improves for younger youths and over time in the U.S. cannot be projected indefinitely into the future. Rather, we predict that this effect will soon plateau and then begin to diminish as the younger family members become more inculcated with values and expectations prevailing among American youth (according to national poll data) which emphasize self-fulfillment and gratification over self-sacrifice and hard work -- a process of "becoming American" that ironically will be dysfunctional for competitive educational attainment. The exact transition will depend on the structural ability of Southeast Asian families to maintain traditional values and norms (pressures) that lead to higher achievement, net of the social class advantages of the parents.

The set of **parents' SES** measures is most predictive of achievement test scores (especially of Math) and least predictive of GPA. Neither of the two variables entered were significantly associated with GPA, but parents' education and the mother's level of English literacy were strongly and positively associated with CTBS outcomes. Interestingly, although zero-order correlations showed a strong relationship between parents' employment and children's educational attainment, employment is not significant in any of the equations when all other variables are controlled.

By contrast, the set of more subjective predictor variables, or what we labeled **parents' psychocultural status**, is strongly predictive of GPA outcomes (accounting for 12% of the variance) but not of achievement test scores (less than 4% of the variance). Indeed, this set of variables is far more predictive of GPA than is the set of parents' SES characteristics, suggesting the importance for GPA of cultural, attitudinal and emotional factors in parent-child relationships (with GPA being seen here as a measure of educational attainment based to a considerable extent on "motivated effort" and "hard work" rather than simply on "talent" or "luck"). Of the two measures tested, the strongest association is that between the index of parents' cultural values (which measures what was earlier called "ethnic resilience") and GPA, and that measure remains significant though weaker as a correlate of achievement test scores. The mother's level of depression (which, it should be recalled, was measured last at T2 in mid-1984) nevertheless remains as a significant negative predictor of GPA, though it washes out of the regression on CTBS scores.

In sum, ethnic variables emerge as the most important predictors of Math achievement scores; age and time variables as the most important predictors of Reading ability in English;

and psychocultural variables (along with age and school experience) as the most important predictors of GPA. Lao students are identified as most at risk in terms of their prospects for educational attainment, relative to the other Southeast Asian groups, even when all other predictors in our model are controlled. Parents' SES is more than twice as predictive of achievement test scores than of GPA (in fact, it is the weakest predictor of GPA), whereas psychocultural variables are about four times more predictive of GPA than they are of achievement test scores (in fact, they are the weakest predictors of CTBS scores). With this discussion in mind concerning the educational attainment of Southeast Asian students, we turn now to a consideration of their occupational aspirations.

Chapter 4.

OCCUPATIONAL ASPIRATIONS OF SOUTHEAST ASIAN YOUTH.

During the 1983-84 academic year, the San Diego City Schools adopted a career counseling program in response to a bill passed by the California legislature (Senate Bill 813) which provided for a review of student career plans by school counselors, and which stipulated that this review is to be provided for students prior to the end of the tenth grade or upon reaching the age of 16, whichever is sooner. Students in the 10th grade complete a comprehensive questionnaire, the "**Career Planning Inventory**," intended to help the students clarify their educational and career goals on the basis of their strongest interests and aptitudes. At the end of this questionnaire, the students are asked to select their **top two career choices** from a list of nearly 200 occupations grouped into the following 12 areas: agriculture and ecological studies; business and office; communications and media; community and personal services; consumer and home economics; fine arts and humanities; health care; industrial and construction; marketing and distribution; public service; science and engineering; and transportation. Those career choices are then permanently recorded in the student's "Cumulative Student Record"--the same data source that lists all courses taken and grades received during the student's academic history at the secondary school level, and the same data source that we relied upon to obtain cumulative GPAs and CTBS stanine scores for Indochinese students in the IHARP-SARYS sample.

For our purposes in this chapter, we report data on occupational aspirations from two samples: first, comparative data by ethnic group for all San Diego high school students who completed the career planning inventory (a sample of 1986-87 Juniors, N=6,890), which permit us to compare the career choices of Southeast Asian students against those of other student groups; and second, the smaller IHARP-SARYS sample which permits us to make more reliable comparisons between the various Southeast Asian groups.

We began our analysis by examining the types and numbers of career choices in the available data base (6,890 students x 2 career choices per student = 13,780 total career choices). These data were then reduced to nine occupational categories: four higher-status professional categories (science/engineering/math-based careers, health care professions, law and public administration careers, and professional careers in education, social service and the arts); a fifth middle-level category for sales workers and related occupations; and four lower-

status job categories (clerical jobs, personal service jobs, police/fire/military, and blue-collar and agricultural occupations). Figure 4-1 presents the percentage of each of these nine career sectors chosen by the high school students in the sample. Note that about half of the sample chose higher-status professions, only 5% chose sales-related careers, and the remainder chose lower-status jobs. Among the former the most popular choices involved careers in the arts, education and social service (21%), while among the latter the most often selected were blue-collar occupations (18%).

Figure 4-2 shows how significantly the division of labor is shaped by gender. (Note that the measure used in Figure 4-2 is the mean number of career choices, which can range from a minimum of zero to a maximum of two choices per student. This measure is a more reliable indicator of students' occupational aspirations than relying solely on their first or their second career choice.) Among the higher-status professions, male students disproportionately aspired to careers in science, engineering and law, while females outnumbered males by 2 to 1 in career choices in health care, education and the arts. Among the lower-status job choices, not surprisingly, males dominated most career choices for public safety and blue-collar work, while females were similarly predominant in selections of clerical and personal service jobs.

Figure 4-3 paints a much more interesting picture of occupational aspirations, here contrasting the number of higher-status vs. lower-status career selections by ethnic group. The relatively small number of Hmong in this sample selected occupations in nearly the same proportions as the Vietnamese and Chinese-Vietnamese, and so these "VCH" Indochinese students are grouped together for the purpose of this presentation. Similarly, Lao and Khmer students chose career paths in nearly identical proportions, but very differently from the "VCH" groups, and so these "LK" Indochinese students are also grouped together here. As Figure 4-3 makes clear, the VCH students (mostly Vietnamese) aspired to higher-status professions more than any other group in the city schools (including the ambitious and high-achieving "Asians"), while the Lao and Khmer had the lowest number of higher-status career choices. In between these two poles came the Asians, Whites, Filipinos, Blacks and Hispanics, in that order. Conversely, the Lao and Khmer picked the greatest number of lower-status occupations, followed in rank order by Hispanics, Blacks, Filipinos, Whites, the VCH, and lastly the Asians. These data dramatize the ethnocultural diversity that exists among Southeast Asian youth with regard to their occupational ambitions. Again, as we saw with the data on educational attainment, Southeast Asian youth are scarcely a homogeneous population.

Figure 4-1.

Occupational Aspirations of High School Students (1986-87 San Diego H.S. Juniors, N=6,890)

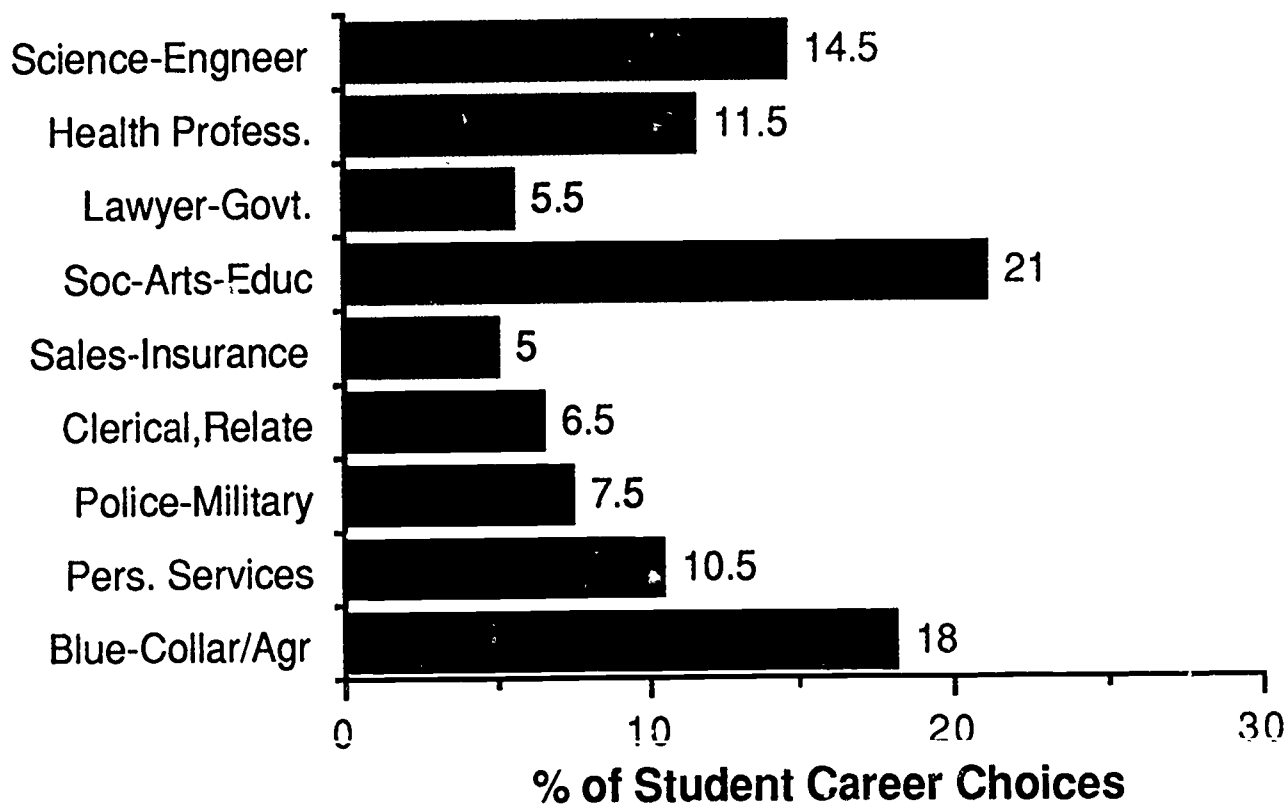


Figure 4-2.

Occupational Aspirations, by Gender (San Diego H.S. Juniors, N=6,890)

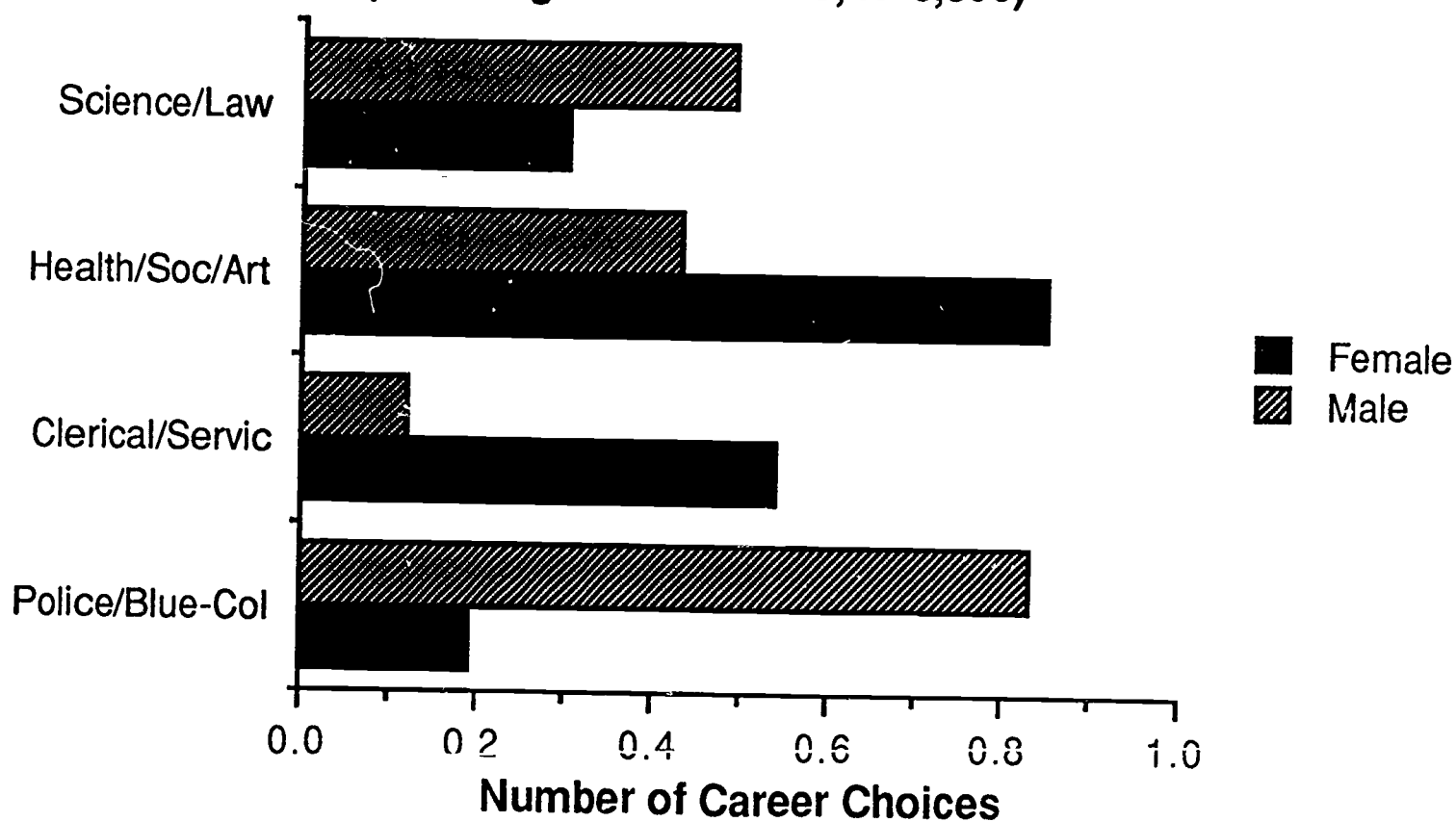
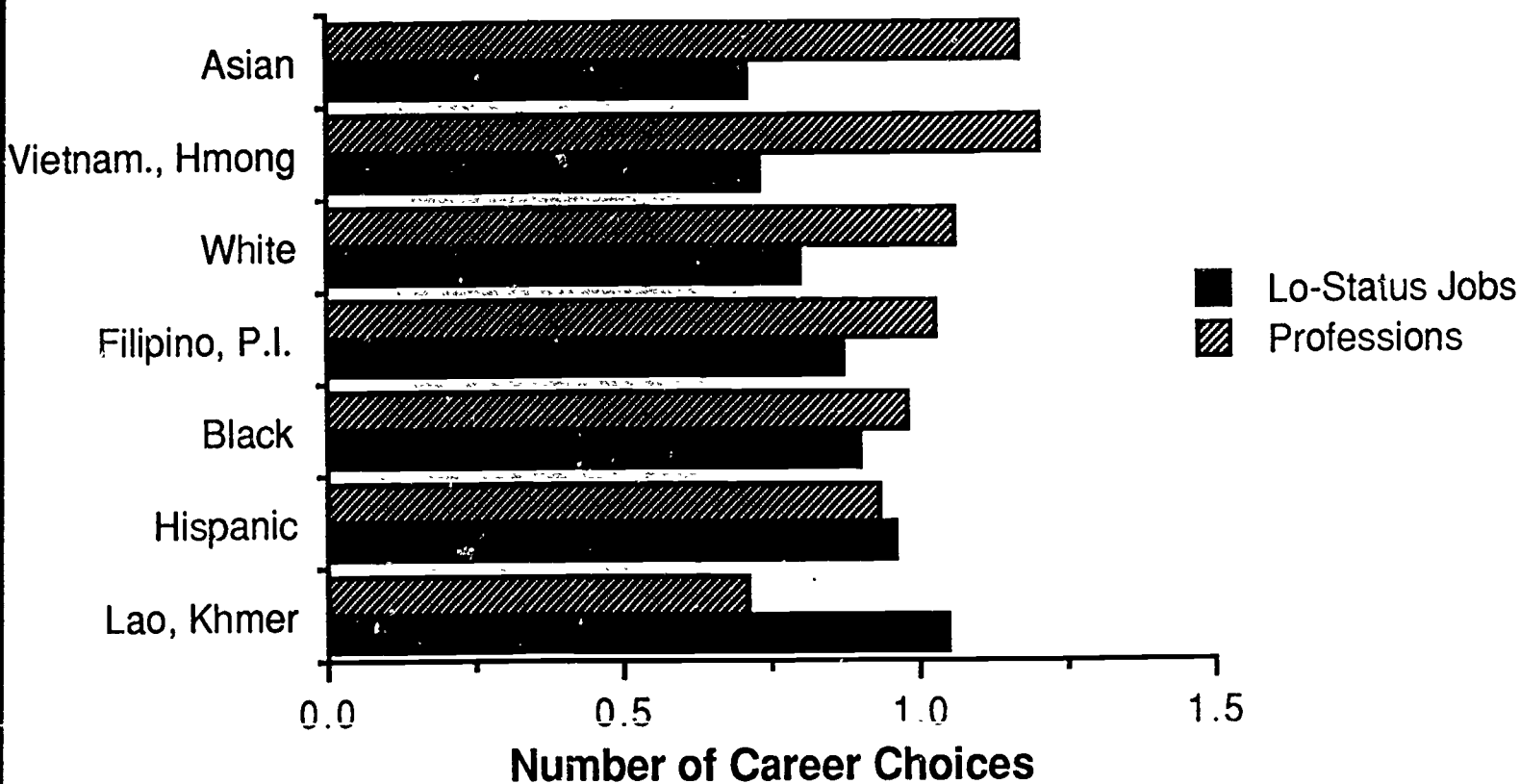


Figure 4-3.

Occupational Aspirations, by Ethnicity (San Diego HS Juniors, N=6,890)



How realistic are these career choices made by young high school students, most of whom have probably not yet entered the labor market? One way to address this question is by looking at the levels of educational accomplishment already achieved by these students at the high school level, and comparing them to their occupational aspirations. Figure 4-4 presents the mean cumulative GPA (without P.E.) of these students, broken down by each of the nine occupational categories. These data make quite clear that the higher the occupational prestige of career choices, the higher the GPA of the students. Thus, the highest GPAs are found among students choosing careers in science and engineering, followed closely by those choosing professions in health care; whereas the lowest GPAs by far are found among those choosing blue-collar jobs, low-status service work, and careers in policing or the military. Similarly, as Figure 4-5 shows, the pattern of CTBS standardized achievement test scores in math and reading show a close association with occupational status: in general, the higher the level of achievement, the higher the level of occupational aspirations. Thus, as might be expected, students choosing math-based careers in science and engineering also showed the highest CTBS math scores, while students selecting professions in the law and government averaged the highest reading scores. (A somewhat alarming finding, on the other hand, is that by far the lowest reading achievement scores belong to those students who would seek clerical positions!)

Turning now to a consideration of occupational aspirations among the Southeast Asian students in the IHARP-SARYS sample, we were able to collect data for 92 of those students in our sample, producing a total of 183 reported career choices. We found that those 92 students had higher cumulative GPAs and were more English-proficient than those students who had not yet completed their "Career Planning Inventory" -- indicating that, at least among Limited-English-Proficient students such as the Southeast Asian refugees, the career counseling process tends to be selective of better-prepared students on the whole. While the resulting sample, therefore, is relatively small and not necessarily representative of the entire population of Indochinese high school students, the results are both significant and suggestive.

Our findings are presented in Table 4-1. Career choices have been here aggregated into six main occupational categories determined by cluster analyses of the data, and these are then broken down by ethnicity and gender. The specific career choices reported by the students, grouped by those six categories, are as follows:

Figure 4-4.

Cumulative G.P.A. by Career Choices (1986-87 San Diego H.S. Juniors, N=6,890)

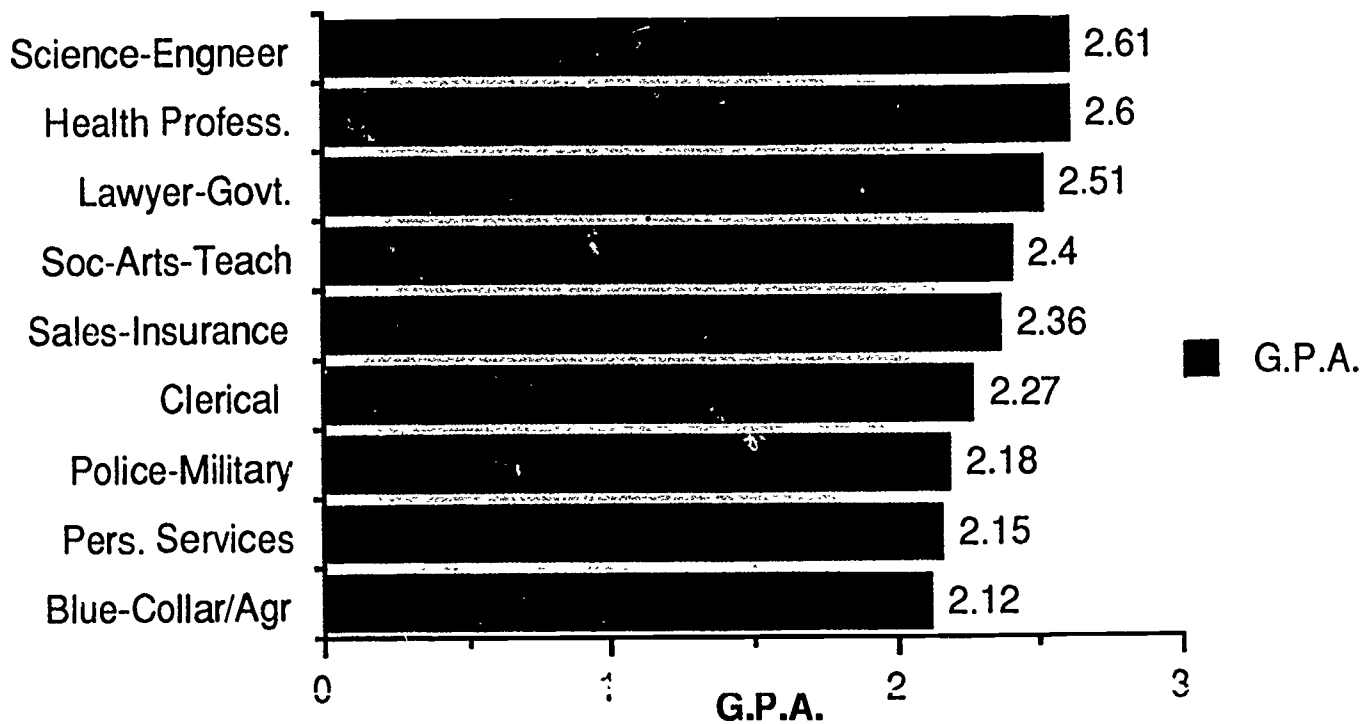


Figure 4-5.

Achievement Test Scores by Career Choices

(1986-87 San Diego H.S. Juniors, N=6,890)

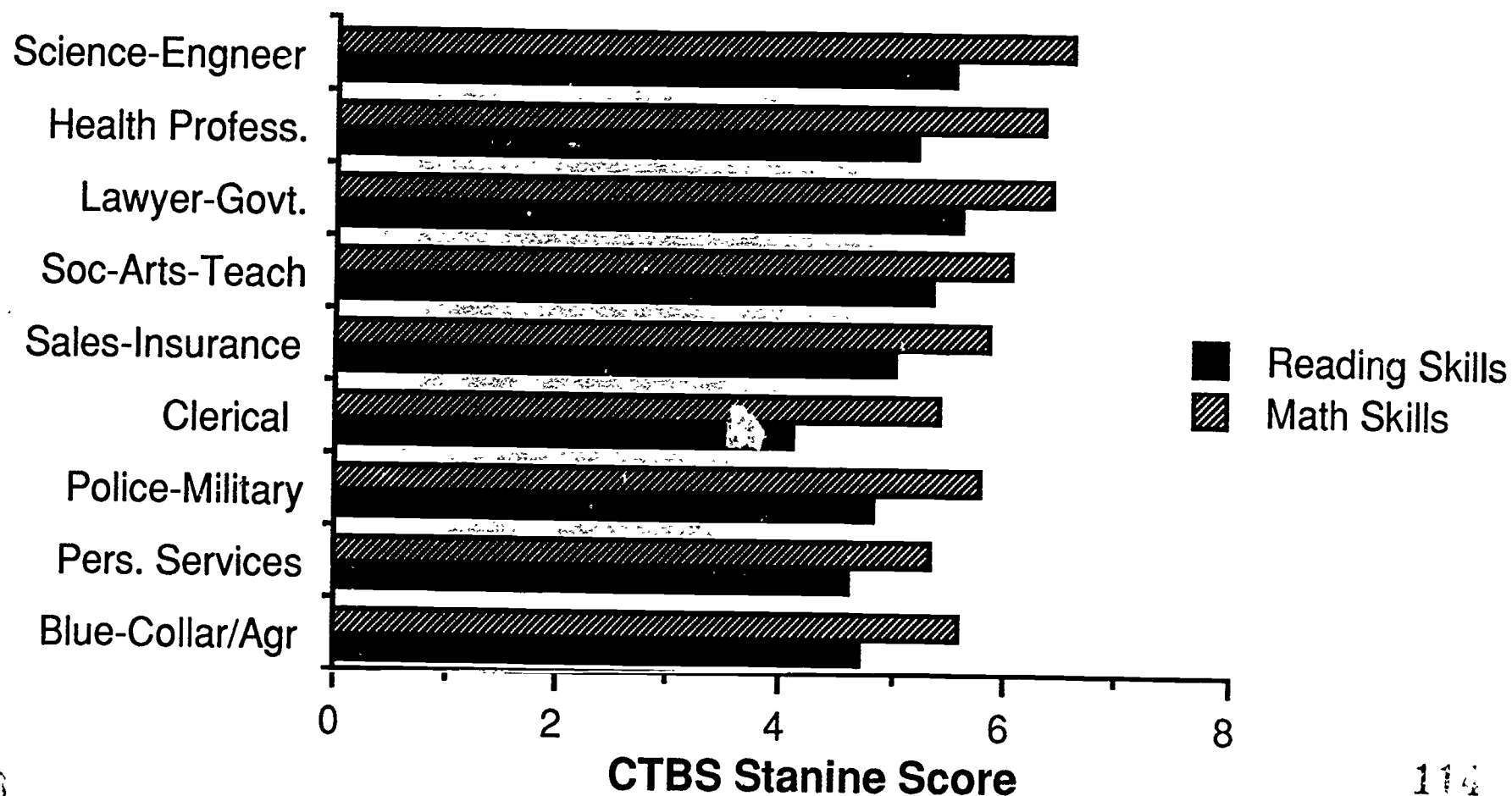


Table 4-1.

**Occupational Aspirations of Indochinese High School Students:
Career Choices, in Percentage, by Ethnicity and Gender ***

(IHARP-SARYS High School Sample, N=183)

CAREER CHOICES	ETHNICITY					GENDER		TOTALS
	Khmer	Lao	Hmong	Chinese	Viet.	Male	Female	
	(N=16)	(N=34)	(N=36)	(N=47)	(N=50)	(N=107)	(N=76)	
Science, Engineering, Math-Based Careers	0.0	11.8	27.8	38.3	42.0	34.6	21.1	29.0
Health Care Careers	18.8	20.6	8.5	14.9	10.0	9.3	21.1	14.2
Teaching, Soc. Services, Fine Arts	31.3	2.9	5.6	6.4	14.0	6.0	9.2	9.8
Law, Police, Military, Prof. Athlete	0.0	11.8	22.2	2.1	6.0	6.6	5.3	8.7
Clerical Work & Personal Services	31.3	35.3	16.7	25.5	18.0	15.0	36.8	24.0
Blue-Collar Work	18.8	17.6	16.7	12.8	10.0	19.6	6.6	14.2

* Differences between ethnic groups and by gender are significant at $p < .05$.

- (1) **Science, Engineering, and Math-Based Careers:** physicist, astronomer, biologist, electronic engineer, chemical engineer, mechanical engineer, mathematician, computer programmer, banker, accountant, physical science technician.
- (2) **Health Care Careers:** physician, professional nurse, nurse aide, X-ray technician, life science technician, medical assistant, pharmacist, optometrist, dentist.
- (3) **Teaching, Social Services, and Fine Arts Careers:** teacher, university professor, pre-primary teacher, personnel director, translator, commercial artist, musician, photographer.
- (4) **Law, Public Service, and Quasi-Professional Careers:** lawyer, police officer, military service, airplane pilot, merchant marine, professional athlete.
- (5) **Clerical Work and Personal Services:** office manager, typist, secretary, bookkeeper, cashier, bank teller, computer operator, sales clerk, model, waitress, cook, beautician, flight attendant, other service worker.
- (6) **Industrial, Construction, and Blue-Collar Occupations:** machinist, mechanic, auto mechanic, airplane mechanic, TV and radio repairman, electrician, carpenter, printer, maintenance man, gardener, forestry worker, tailor, bus driver.

Table 4-1 shows that there are significant differences ($p < .05$) in occupational aspirations by ethnic group and by gender, which in turn generally reflect our previous findings on educational attainment and achievement test scores. Thus, for example, students chose math-based occupations in science and engineering almost in exact proportion as their CTBS math proficiency scores: the Vietnamese were most likely to choose such careers (42%), followed by the Chinese-Vietnamese (38%), the Hmong (28%), the Lao (12%), and the Khmer (0%). Precisely the opposite ranking is evident among students selecting blue-collar jobs in industry and construction: first in this area of career choices are the Khmer (19%), followed closely by the Lao (18%), then the Hmong (17%), Chinese (13%) and Vietnamese (10%). The Khmer and Lao, who have the lowest GPAs and achievement scores, disproportionately selected careers in health care, clerical and personal services, and blue-collar work. The Hmong, whose fathers were typically either farmers or guerilla fighters in Laos, predominate among students selecting police and military service, as well as professional athletics (as do, to a lesser extent, the Lao). The Khmer are also more likely than other groups to select careers in

teaching, social work and the fine arts. Males are disproportionately found among science, engineering and math-based careers (35%), law, police and military (9%), and blue-collar jobs (20%); females are more often found among careers in health care (21%), teaching, social work and fine arts (9%), and clerical work and personal services (37%). Overall, more than 60% of the Indochinese student sample aspire to professional or para-professional careers, another 24% expect to go into office work or personal services, and only 14% look ahead to blue-collar jobs.

It is, of course, uncertain at best to rely on high school students' career choices as an accurate barometer to predict the degree to which their reported occupational aspirations will be realized in the future (or converted into "economic self-sufficiency"). Our analyses of these data suggest, however, that these students' expressed career choices are quite valid and realistic--at least gauged on the basis of their actual level of educational attainment. For example, students aspiring to careers in the sciences and engineering had the highest cumulative GPAs, averaging above 3.25; those choosing health care careers had GPAs above 3.0; those choosing careers in teaching, social work, fine arts and public service had GPAs above 2.75, while the GPAs of those selecting clerical and personal service jobs averaged just below 2.75; finally, those students who expected to go into blue-collar work were those with the lowest average GPAs (below 2.5). These same patterns were observable with the three composite index scores (total math, language and reading) of the CTBS achievement test.

In addition, we conducted a correlational analysis between these educational achievement measures and the level of occupational prestige aspired to by the students. Career choices were converted to occupational prestige scores using Treiman's Standard International Occupational Prestige Scale (SIOPS), which we had found to be a highly reliable measure with Indochinese groups in the IHARP study. Correlation coefficients (Pearson's r) show very strong and significant ($p < .0001$) positive associations between the SIOPS prestige score of the chosen careers and all our measures of educational attainment. The correlation of occupational aspiration (measured in Treiman prestige scores) with cumulative GPA was .468; and it was .505 with the CTBS Total Math score, even higher (.555) with the CTBS Total Language score, and .422 with the CTBS Total Reading Score. We found no correlation with the age of the student, but there was a modest association ($r = .19$, $p < .05$) between prestige and the number of semesters completed in high school.

All in all, these data on occupational aspirations complement and confirm the general pattern of educational attainment elaborated above for each of the Indochinese ethnic groups--

and provide additional clues to predict the likely futures of these refugee youth in terms of economic self-sufficiency. The SIOPS occupational prestige scores for the student sample were highest for the Chinese (56.1) and the Vietnamese (54.6), followed closely by the Hmong (53.3), then the Lao (50.4), and lastly the Khmer (47.2). The difference between males (54.1) and females (51.9) was not significant. Occupational prestige scores for the careers chosen by these refugee youth (the mean prestige score for the sample as a whole is 53.2) are much higher than the present occupational status scores of their parents (see Rumbaut, 1986, for detailed IHARP findings on the occupational adaptation of the parent sample), suggesting generally that the employment and economic futures of this coming generation of Southeast Asian youth may be viewed with a reasonably well-grounded optimism.

Chapter 5.

PROBLEM AREAS: DROPOUTS, SUSPENSIONS, AND DELINQUENCY

A. Southeast Asian Student Dropouts from San Diego City High Schools.

The problem of student dropouts from school prior to graduation from high school is becoming a social and economic issue that is receiving increasing national attention and concern. Recent reports have indicated that 53% of the Class of 1985 dropped out of school in New York City, while 43% of Boston's Class of 1985 dropped out of school. In California, Senate Bill 65 (the Torres bill) singles out the school dropout problem as a high priority issue, especially among minority youth, and allocates considerable public resources for the development of programs and strategies to reduce the number of dropouts. In San Diego, as recently noted by a research report from the San Diego City Schools and by a blue-ribbon Schools of the Future Commission (1987), the comparable four-year dropout rate for 1985-86 is 36.7%; that is, 36.7% of all high school students who enter the ninth grade will drop out before graduation. According to the Commission's report, this rate of students leaving school could mean a loss to San Diego's economy of an estimated \$725 million in unrealized earnings and a loss of some \$29 million in city tax revenues over the lifetime of each graduating class. From the point of view of the SARYS study, a high rate of Indochinese student dropouts could have similarly negative consequences for the economic self-sufficiency prospects of these refugee groups.

Historically, Asian students have had very low rates of student dropouts relative to other groups. SDCS four-year dropout data for 1985-86 for the district's major ethnic groups estimate a dropout rate of 47.2% for Hispanics, 41.3% for Blacks, 34.2% for Whites, 29.6% for "Asians," and 27.8% for Filipinos. Since no such SDCS data were separately available for Indochinese students (who instead were included under the "Asian" category), we obtained the records for all Indochinese students who dropped out of grades 10, 11 or 12 from local high schools during 1985-86 and coded the specific ethnicity of each student. During 1985-86, of a total enrollment of 24,847 students in grades 10-12, 2,691 dropped out (an annual rate of 10.8% for the district). Of these, 169 students were Indochinese, out of a total enrollment of 1,590 Indochinese students in grades 10-12 (for an overall Indochinese annual dropout rate of 10.6%--nearly identical to the district norm). However, we found significant variations among

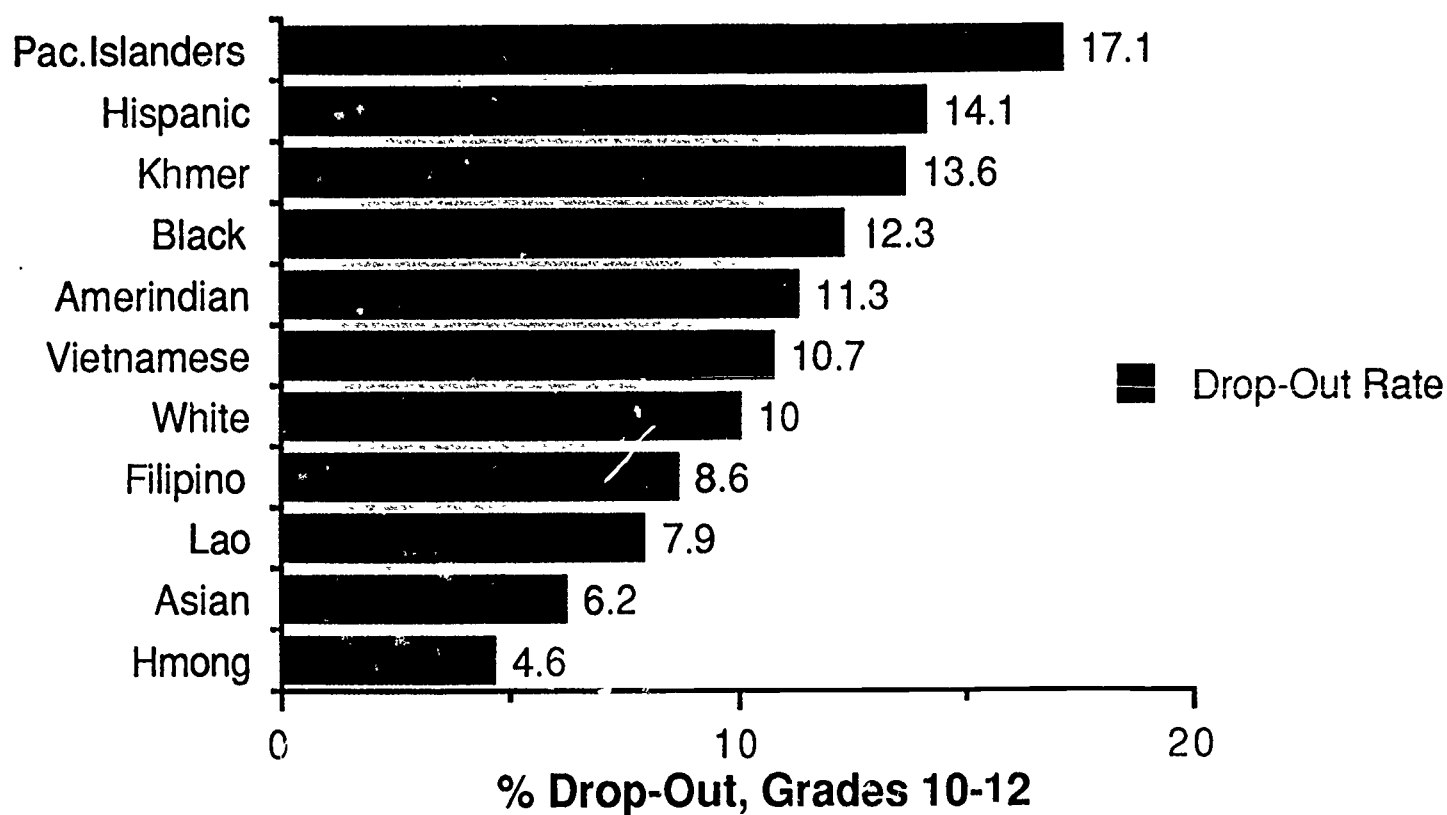
the several Indochinese ethnic groups. In what follows we present the results of our reanalysis of the dropout data for all ethnic groups for grades 10-12 (N=2,691).

Before proceeding, it would be helpful first to clarify the technical definition of a dropout, as used by the San Diego City Schools. The SDCS follows the official definition of the California State Department of Education: "A 'dropout' is any student who has been enrolled in grade 10, 11, or 12, but who left school prior to graduation or the completion of a formal education or legal equivalent, and who did not, within 45 school days, enter another public or private educational institution or school program, as documented by a written request for a transcript from that institution." As a technical aside, because of the 45-day requirement, a dropout who withdraws from school with fewer than 45 days remaining in the school year is therefore not identified as a dropout until the following school year, and hence will not be counted as a dropout for the school year of departure (but will be counted as such for the subsequent school year). The 1985-86 SDCS data counting 2,691 dropouts (or 10.8% of enrollments) for grades 10-12 are based on this definition. [Note also in this regard, recalling our earlier distinction between "Active" and "Inactive" students, that all such dropouts would be considered as "Inactive" in SDCS records for a period of three years, at which time they would be expunged from the files; but not all "Inactive" students are dropouts, since some may have simply moved out of San Diego and legitimately transferred to another school system within the requisite 45 school days. In such a case, that student's record would be considered "Inactive" but not counted as a dropout.]

Figure 5-1 presents the results of our reanalysis of dropout data by specific ethnic groups in San Diego high schools for 1985-86. The results are of considerable interest. When the data are disaggregated by ethnicity and an annual dropout rate is calculated for each group relative to respective enrollments, we find that Pacific Islanders (mainly Samoans and Guamanians) have the highest dropout rate (17.1%), followed by a rate of 14.1% for Hispanics (who include among their numbers a fairly mobile Mexican immigrant population), and 13.6% for the Khmer. The Vietnamese rate of 10.7% falls between that of Blacks (12.3%) and Whites (10%). These are followed by the Filipinos (8.6%) and the Lao (7.9%). The lowest dropout rates we found among the "Other Asian" (Chinese, Japanese, Korean) groups (6.2%), and the Hmong (only 4.6%). **Thus, these data flag the Cambodians as the most at-risk group among the Southeast Asians for dropping out of school** -- a finding that parallels a general pattern of relative "withdrawal" that we have identified among the Khmer. Dropout norms for the Vietnamese are at the average for the San Diego

Figure 5-1.

1985-86 Student Drop-Out Rates, by Ethnicity (San Diego City High Schools, N=2,691 Drop-Outs)



City Schools, while those for the Lao and especially for the Hmong are below district norms. Note that the ranking of these groups in terms of dropout patterns do not correspond to the rankings we observed among them in terms of educational attainment or occupational aspirations, suggesting the possibility that different causal factors are implicated in the dropout rates reported above.

B. Southeast Asian Student Suspensions from San Diego City Schools.

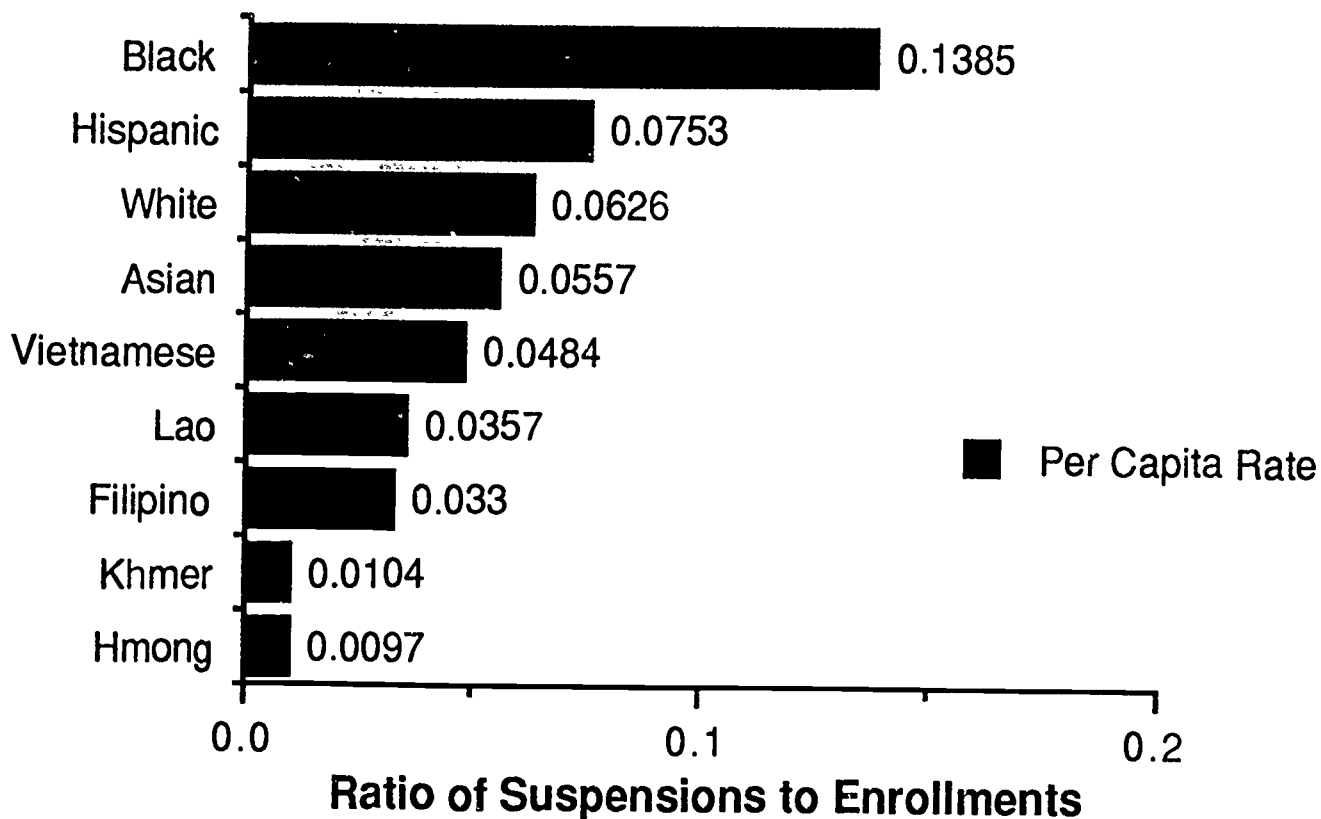
In May 1986, the San Diego City Schools released a "Report on 1984-85 Student Suspensions" which reviewed evidence of direct relevance to the SARYS investigation. The report found that the overall number of student suspensions in grades K-12 **declined** by 16% (from 9,633 to 8,102) between the 1983-84 and 1984-85 academic years. Suspensions decreased for all White, Black and Hispanic students from the previous year's levels. However, suspensions for "Asian" students **increased** by 22% over the same time period--including a sharp increase of 53% at the junior high school level. A disaggregation of these data for Asians indicated further that **suspensions for Indochinese students had increased more rapidly (by 47%) than for any other group.** The principal reason for Indochinese student suspensions was fighting with non-refugee students.

These student suspensions data (N=8,102 cases) were recoded and reanalyzed by SARYS, particularly to permit a further breakdown by each of the major Indochinese ethnic groups. In addition, we calculated suspension rates for each of the ethnic groups in the city schools by controlling for their respective enrollment levels in 1984-85. These data on suspension-to-enrollment ratios by ethnicity are presented in Figure 5-2. Black students exhibit the highest suspension-to-enrollment ratios (.138), followed by Hispanics (.075), Whites (.063), and other Asians (.056). At the other end, the lowest suspension rates in the city schools are those of the Hmong and the Khmer (both at .010). In the middle are the Vietnamese (.048) and the Lao (.036). A review of the Indochinese data (N=268 cases) by ethnicity thus documents the fact that among suspended Indochinese students, the Vietnamese and the Lao are overrepresented, while the Hmong and Khmer are underrepresented.

These quantitative findings by ethnic group are in accord with our qualitative findings, and help further to differentiate clearly between the various groups on social and psychocultural grounds. Thus, for example, our ethnographic materials indicate that the highland Hmong--who as subordinated ethnic minorities in Laos may have evolved a cautious pragmatism in coping with the overt racism of the lowland Lao--typically find ways of avoiding racial confrontations in school interactions; their avoidance motive, however, is explicitly instrumental: they simply want to avoid trouble. The Hmong also maintain the greatest affective distance from other students in school relationships. The Khmer, on the other hand, more than any of the other groups we studied, seem most preoccupied with getting along with others and establishing harmonious relationships on an affective/expressive rather than

Figure 5-2.

1984-85 Student Suspension Rates, by Ethnicity (San Diego City Schools, N=8,102 Suspensions, K-12)



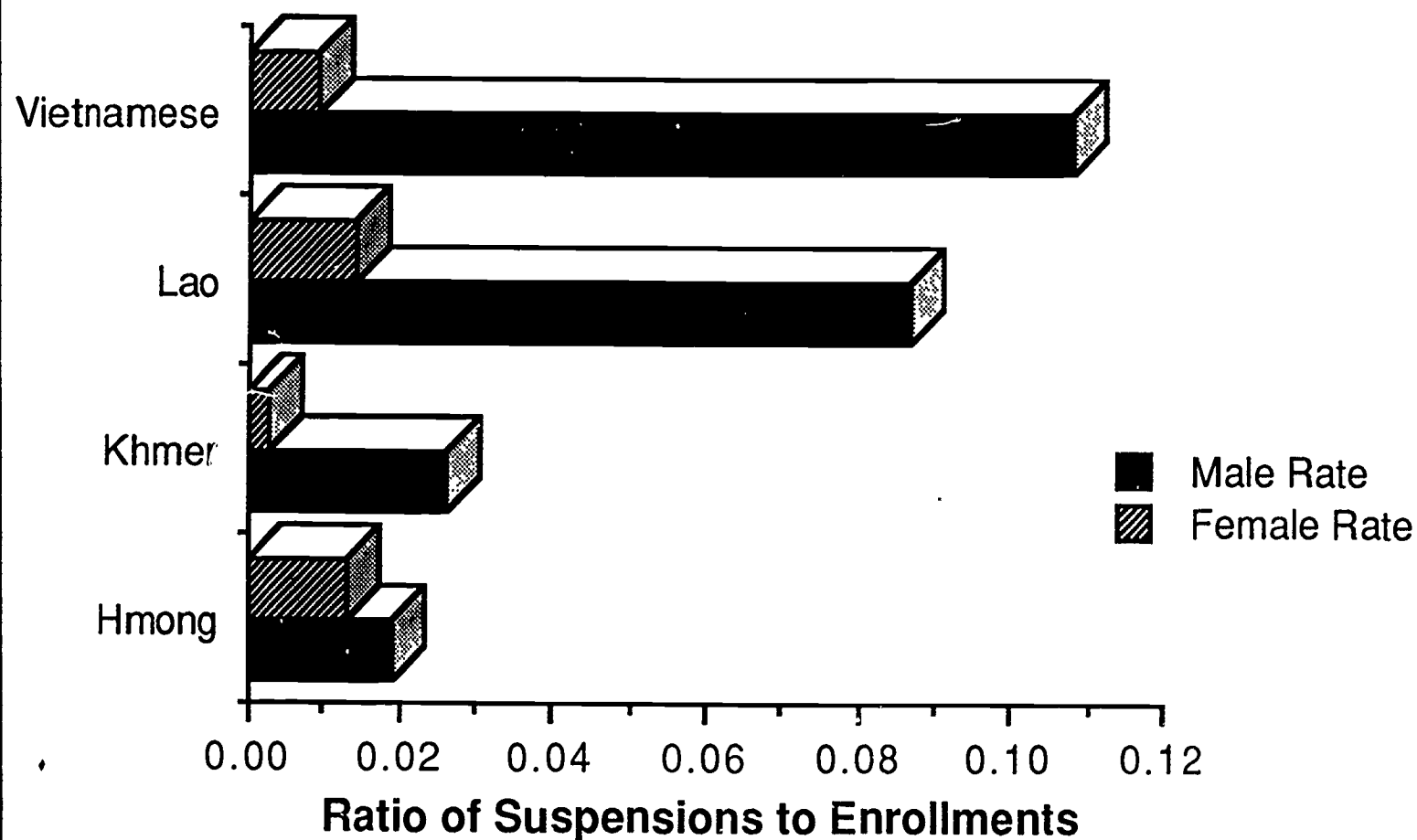
instrumental level; the Khmer also exhibit a cultural pattern of uncomplaining passive acceptance of the world, and in addition some Khmer students reflect a pattern of psychological withdrawal which may be connected to the elevated levels of aggressive symptomatology found in their parents. In contradistinction to the Hmong strategy of **"instrumental avoidance,"** the Khmer coping style is a curious (and seemingly contradictory) pattern which we may call **"expressive withdrawal"**--a pattern that can be linked to the finding on high Khmer dropout (another form of withdrawal) rates reported above, and that also reflects consistent survey data among Khmer adults which indicate that the Khmer are simultaneously by far the most depressed and yet satisfied group among the Southeast Asians (cf. Rumbaut, 1985a). In any case, although via different routes, the end result seems to be exceptionally low rates of school suspensions for the Hmong and the Khmer. All of this contrasts sharply with the attitudes and reactions of the Vietnamese and the Lao, who despite their many differences share certain elements in common: they were ethnic majority groups in their countries of origin, seem to be more **conflict-oriented and aggressively preoccupied with "saving face"** (and ethnic pride), and are more easily drawn into racial confrontations in the U.S. when provoked by non-refugee students. Some Vietnamese students (particularly males), for example, told us that they will not respond at the first insult from an American student, would take notice of a second insult from the same **provocateur**, and will "blow up" and get into a fight in response to a third or subsequent provocation.

Despite the rapid rise in the rate of recent Indochinese student suspensions, however, these data should be placed in perspective. Of the 8,102 suspensions meted out during 1984-85, only 3.3% (N=268) involved Indochinese students--less than half their proportion in city schools. Also underrepresented relative to their enrollments were Filipinos (2.9%), other Asians (2.1%), and whites (40.1%). Hispanic student suspensions (20.5%) roughly matched their proportion of enrollments. Black student suspensions (30.4%) were about twice as high as their enrollment levels, even though the number of their suspensions dropped by 23% from the year before (the greatest decline in suspension rates among any of the student groups). In addition, the following observations are worth noting from our reanalysis of the suspensions data:

* Overall, male students accounted for 77% of all suspensions, against 23 % for female students. However, among Indochinese suspended students, an even more disproportionate 92% were boys and only 8% were girls. Figure 5-3 presents data on suspension-to-enrollment ratios by gender for each of the four main Indochinese groups.

Figure 5-3.

Indochinese Student Suspension Rates, by Gender (1985 Indochinese School Suspensions, N=268)



* Over two-thirds (69%) of all suspensions (encompassing grades K to 12) were concentrated in grades 7 to 10, and over half (56%) occurred at the junior high school level (grades 7 to 9) and among students in the early adolescent ages (ages 12 to 15 years). The pattern for Indochinese students was similar but showed a higher proportion of suspensions in grades 8, 10, 11 and 12.

* Overall, the **length of suspensions** averaged 2.28 days per student (2.32 for boys, 2.17 for girls), but suspensions were significantly longer for Indochinese students, averaging 2.48 days (2.47 for boys and 2.61 for girls). The differences in length of suspension by gender are significant for all students ($p < .0001$), but they are not statistically significant among the Indochinese. Figure 5-4 compares the average length of school suspensions by gender for each of the student ethnic groups. Note that while the Hmong are the least suspended group in the city, when they are suspended it is usually for fighting and hence the suspension tends to be longer in duration (although here the N is so small that this estimate may be unreliable); on the other hand, the Khmer, who also have a very low suspension rate, additionally have the distinction of having the shortest average length of suspensions of any group in the city schools (a finding that applies both for Khmer boys and girls). Setting aside the Hmong in Figure 5-4 (given their low N), note that it is the Lao who have the longest suspensions in the city schools, followed by the Vietnamese.

* The length of suspensions increases monotonically with the age and grade of the student until it peaks in the 11th grade, then decreases slightly among seniors. While suspensions for all juniors averaged 2.50 days, those for Indochinese juniors averaged 3.11 days. Figure 5-5 compares the length of suspensions meted out to junior high students (grades 7-9) vs. senior high students (grades 10-12), by ethnic group. Note that the Indochinese students are much more likely than the non-Indochinese to receive long suspensions at the senior high level.

* Looking at the **reasons** for student suspensions, one particularly significant difference stands out: only one-third (34%) of all suspensions were given for "Physical Injury," but almost half (49%) of Indochinese student suspensions were for "Physical Injury" (involving mostly fights with other non-Indochinese students). This is vividly shown in Figure 5-6, which makes clear that among suspended students, the groups most likely to be suspended for fighting are the Indochinese newcomers, whereas those least likely to be suspended for fighting are whites and established minorities.

Figure 5-4.

Length of 1985 School Suspensions, by Gender (San Diego City Schools, N=8,102 Suspensions)

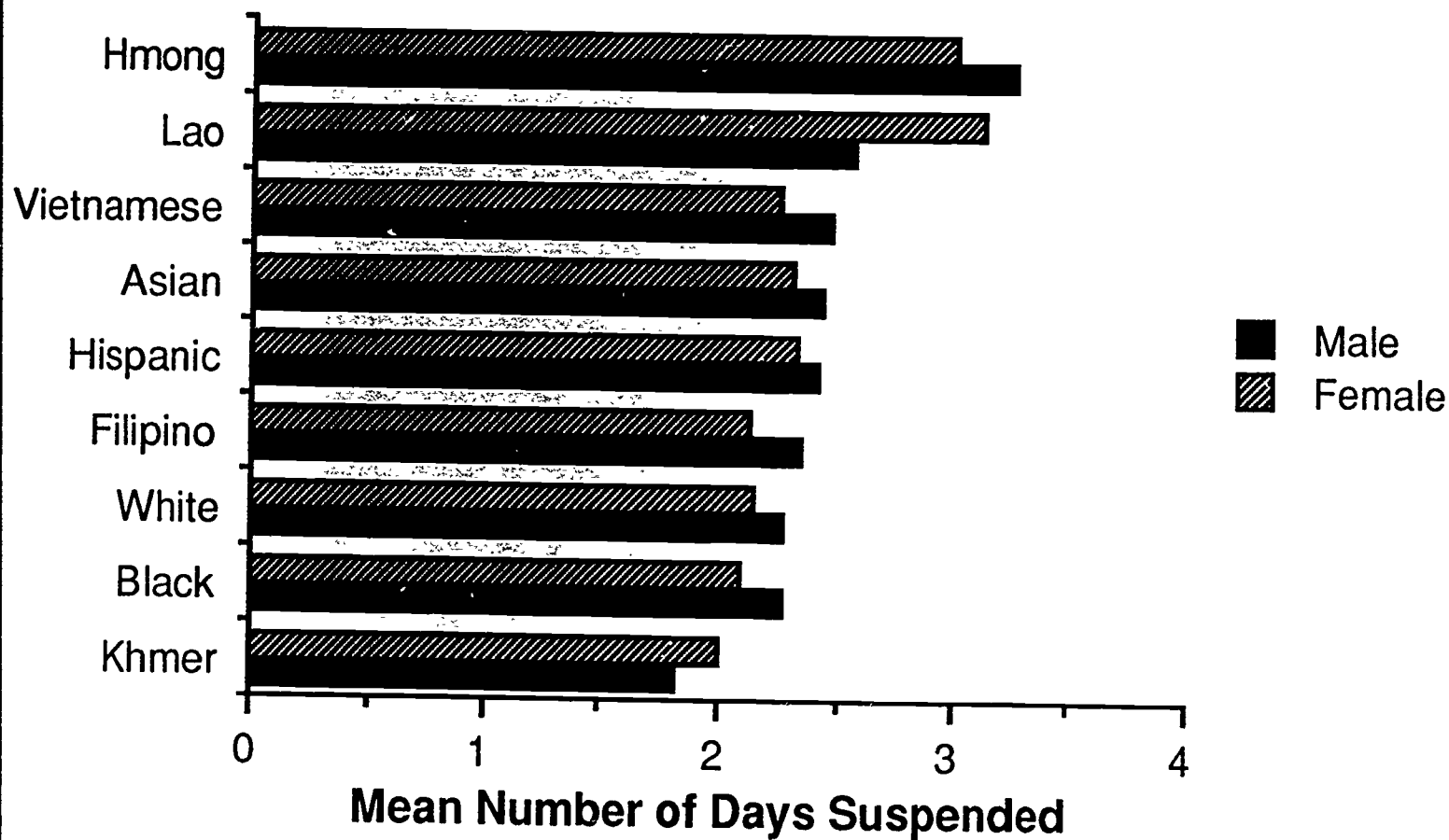


Figure 5-5.

Length of School Suspensions, By Grade Level (San Diego City Schools, N=8,102 Suspensions)

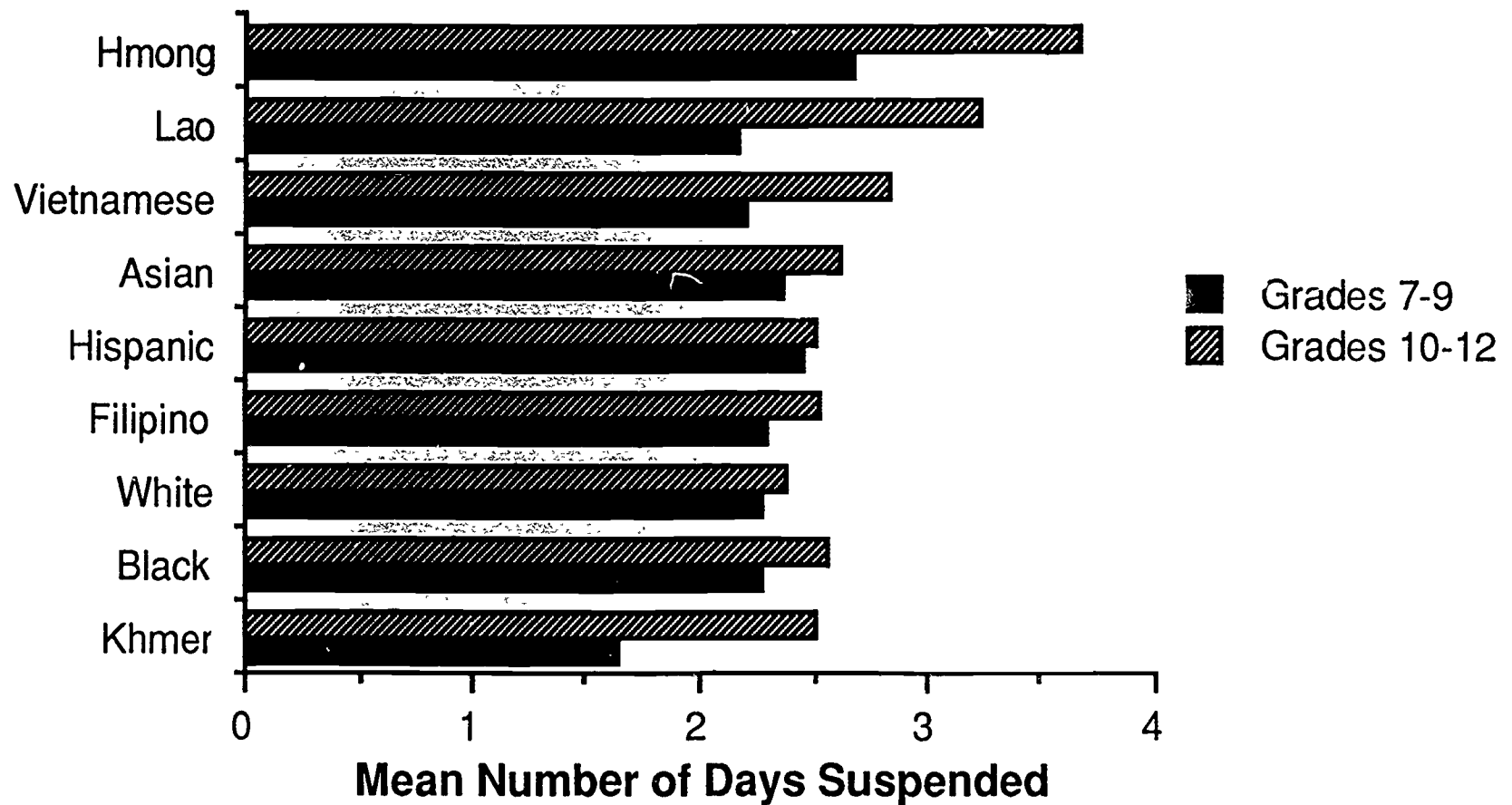
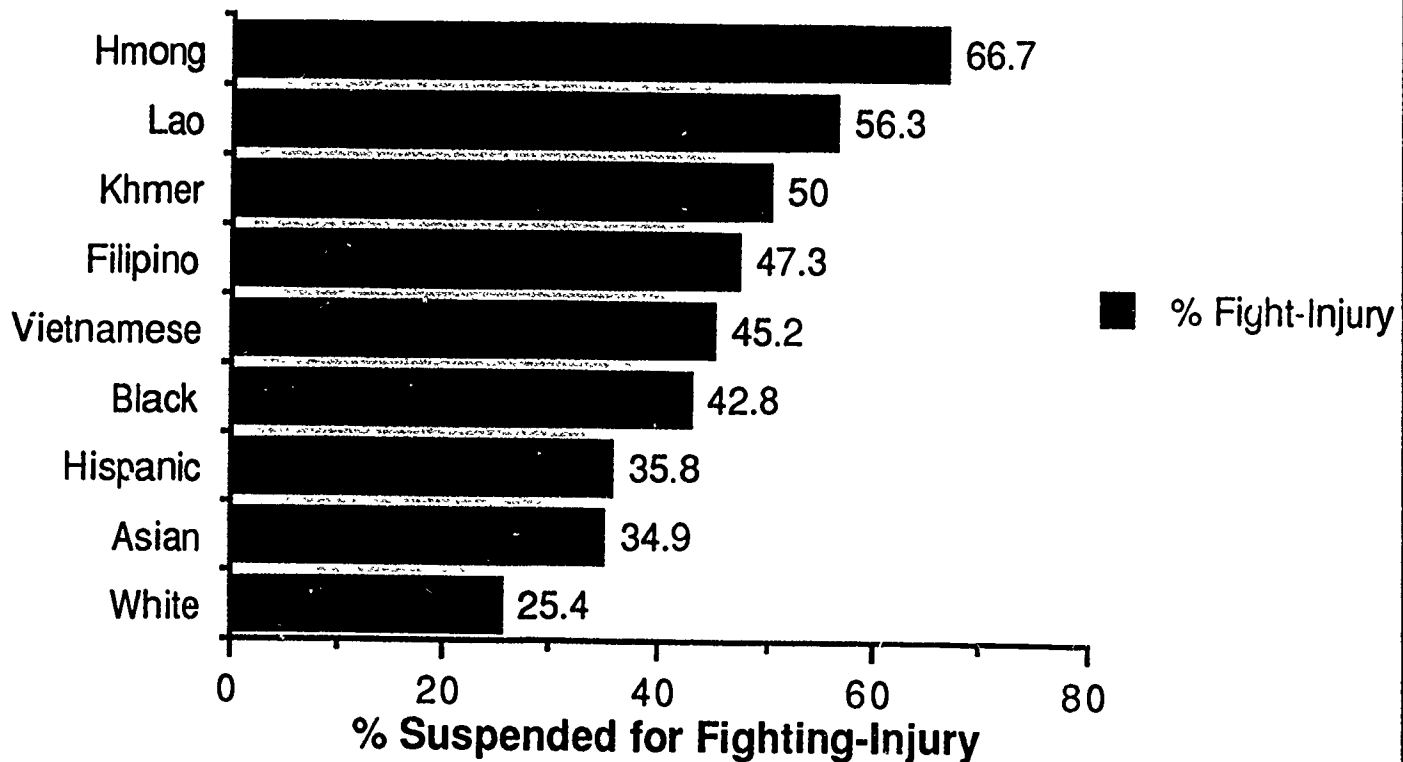


Figure 5-6.

1985 School Suspensions for Fighting, by Ethnicity (San Diego City Schools, N=8,102 Suspensions)



* Strongly significant differences ($p < .0001$) were observed in the reasons for suspensions among ethnic/racial groups: White majority students were suspended disproportionately more often than other groups for drugs (see Figure 5-7), smoking, obscenity, disruption and defiance of authority (see Figure 5-8). Among minorities, Black students were suspended disproportionately for fighting and stealing; Hispanics for property damage (including symbolic territorial expressions such as graffiti on walls); Asians and Filipinos for weapons, stealing and property damage; and Filipinos and Indochinese for fighting, as noted above and in Figure 5-6. Conversely, blacks were the least likely to be suspended by school staff for weapons or smoking, or (next only to the Indochinese) for drugs.

* The Indochinese students were the least likely of all the ethnic groups to be suspended for drugs (see Figure 5-7), stealing or property damage, but the most likely to be suspended for fighting/physical injury. In fact, the Indochinese were suspended for fighting/physical injury disproportionately more often than any other group in each grade from the 4th to the 12th grade in San Diego city schools, without exception.

What are the underlying reasons for these patterns in school suspensions among the various ethnic/racial groups? At the end of the 1984-85 school year, the Community Relations and Integration Services Division of the San Diego City Schools released a report documenting evidence of "linguistic, racial and social barriers [facing] Indochinese students" in the city schools, including "increasing prejudice toward all Asians, particularly the Indochinese." This report also shed some light on some possible reasons for the rapid rise in recent Indochinese student suspensions: "Both schools and community report increased physical retaliation by Indochinese students in response to verbal and physical abuse from other students." The report went on to observe that: "Concerns regarding the problems faced by Indochinese students have increased dramatically within the past year. There is increased community dissatisfaction over the Asian 'model minority' success stereotype as well as the name-calling and physical abuse between Indochinese and other students. Staff and students demonstrate a lack of understanding of particular Indochinese behaviors and values. Increase of gang influence is also noted within the Indochinese community."

This SDCS report relied on data from three main qualitative and quantitative sources: (1) interviews with 22 principals and vice-principals at 14 school sites (K-12) to determine their assessments of the problems faced by Indochinese students; (2) interviews with four

Figure 5-7.

1985 Drug-Related School Suspensions, by Ethnicity (San Diego City Schools, N=8,102 Suspensions)

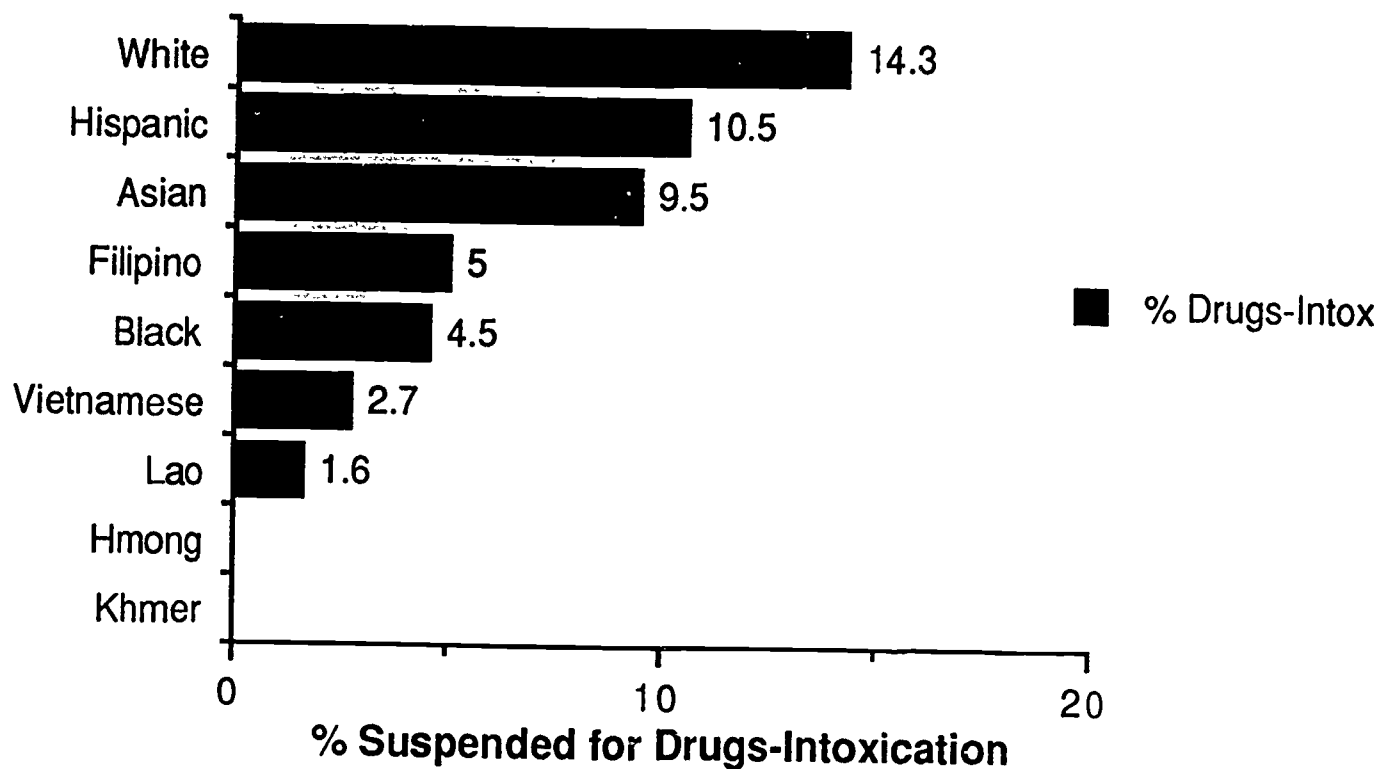
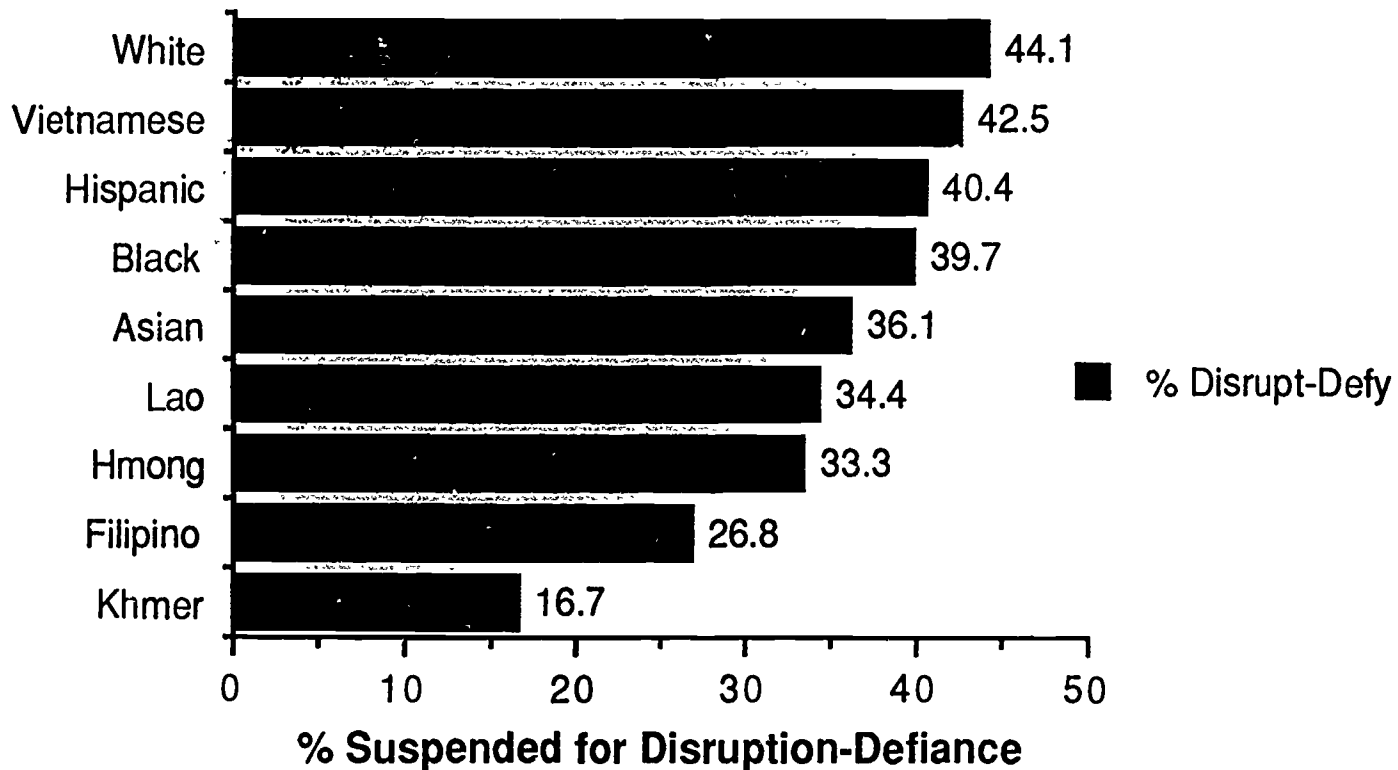


Figure 5-8.

1985 Suspensions for Disruption-Defiance, by Ethnicity (San Diego City Schools, N=8,102 Suspensions)



Indochinese Second-Language Resource Teachers; and (3) surveys of a total of 521 students at two junior high schools (N=447) and their feeder elementary schools (N=74) which had high proportions of Asian students. The students were asked to comment on the good and bad points of integration efforts at their schools. The student surveys in particular vividly document a pattern of very strong resentment and overt prejudice toward Indochinese students, particularly in the junior high schools, where about 30% of non-refugee students spontaneously expressed sharply racist remarks against the refugees. (There were other students who refused to comment.) In fact, the report found that "of all students, one in four reported spontaneously that refugees were either hated or that they were receiving bad treatment. It should be noted that the negative comments come from Black and Hispanic as well as white students." Some illustrative junior high school student comments cited in the report included the following:

"Kick the Yongs out of the school."

"Make the Nips go back to their country."

"Get rid of the Cambodians."

"I think Blacks and Whites get along great but it's the Vietnamese we can't stand."

"This school has too many Nips and not enough white people and Mexican."

"Get rid of all the Vietnamese people."

"I hate the Asian kids. They've done lots of harm to me and my family."

"The Asians really bug me. I don't think the two races of Americans and Asian get along."

"Send some of the Chinks out of this school to other schools."

"Well, the Nips are taking over the school, they cause a lot of problems, because they never understand who they are talking to; they ruin my day almost everyday."

"Get rid of all the Vietnamese, Chinese, and Japanese. They cause too much trouble with the rest of us. Please send them back to Vietnam, China, and Japan. Thank you."

"Send more white people to the school than Blacks and Nips."

"There are too many Yongs at the school."

"Move some Nips to other schools..."

"There is too many Chinese or Yongs, more oriental people than Americans in this school."

"Get rid of Yongs, and get a new location. Get more Blacks, Mexicans, Whites, and Philipinos."

"They could be more fair to the white, Black and Mexican people because they treat Vietnamese more special because they're from another country and I don't think that's very fair."

"To be truthful, I don't like the people from Japan and China and Vietnam... you can send them back."

"Too many Asians and not enough Blacks."

"I don't like the Asians. We get into many fights."

"Cut down on the Vietnamese."

"More white people."

"Get them out of here."

Students at the elementary level were less likely to express negative feelings about race/human relations at their schools than secondary students, according to the San Diego City Schools report. But still, at one elementary school about a third of the students (25 of 74) were well aware of and unhappy with name-calling, especially of refugee students, and typically offered responses such as the following as suggestions for school improvement of race/human relations:

"Stop calling us Nips," "Not calling us Asian names like Chinks."

"Not to hurt other people's feelings."

Although the above materials include responses from refugee students, it is difficult to ascertain refugee perceptions and responses to racism. In reaction to the above-cited SDCS report, a Vietnamese social worker who was conducting a Vietnamese peer counseling class at a local junior high school asked her students about their experiences and feelings of racism. Seventeen of the 24 students (12 males, 12 females) reported experiencing name-calling during the school year, e.g., Yang, Nip, Chink and Jap. In response to name-calling, 9 swore back and 6 fought back. An additional 5 students observed fights between Vietnamese and non-refugee students. Thus a total of 11 students or 46 percent experienced directly or indirectly physical confrontations because of reactions to racial baiting.

Are their experiences tied to personal or social characteristics? The most obvious factor is gender. Six of the 12 Vietnamese female students experienced name-calling and 11 of the 12 male students experienced the same. Of those 6 females, three ignored the name-calling and three swore back; however, of the 11 males, three ignored the name-calling, one swore back and seven **fought** their name-callers. The second factor is their household arrangement -- whom do they live with? Community workers in the refugee community frequently comment about the effect of not having parent guidance, and tend to see refugee youths as getting in trouble because of "the lack of proper parental supervision." Among the 24 Vietnamese students, 5 of the 11 students who stated that they live with both parents have encountered name-calling problems, whereas 11 of 12 students who live in other household arrangements (either with a single parent, other relatives, or unrelated persons who are their guardians)

experienced the same problem. Perhaps by coincidence, in this class females were more likely to reside with both parents. Thus it is difficult to sort out whether or not gender, household arrangement or both contribute to a cycle of conflict with other students after being provoked. It may also be considered, tentatively, that some conflicts between refugees and non-refugees may possibly evolve into reciprocally aggressive relationships wherein refugees (perhaps males with a "chip on their shoulder"?) may at some point begin to initiate or provoke conflict themselves. A common pattern of conflict between Vietnamese and non-refugee students involves a series of insults and abuses hurled at the refugees leading to a violent reaction on the part of the refugee toward the name-caller/abuser. This pattern is consistent with a Vietnamese culture which treats conflict seriously and not as a casual affair--which is the way many American-born youth tend to view such confrontations. Thus, one interpretation of these problems may be that American-born students may be surprised over the perceived "excessiveness" of Vietnamese reaction, and then use the "overreaction" as a rationale for justifying continued provocation and racial baiting, leading to vicious-cycle dynamics that only tend to worsen over time.

One last issue of relevance to this discussion involves Vietnamese students' perceptions of prejudice or discrimination by teachers and staff. When asked about such mistreatment, 6 of the 24 students claimed that they were mistreated. One student expressed this sentiment: "They think we are ugly and also stupid because we have different color." Another student said that a teacher told them to shut up and then made a negative reference to Vietnam. Others identified certain teachers as imposing what they felt was unfair punishment on Vietnamese students. They feel little can be done to correct such incidents, accepting the advice of older refugees about "not making waves," yet they also feel that non-refugee students get help for their problems. For these students at least, school is an unfair world for refugees. When asked what measures could be instituted to create better relations, 10 of the Vietnamese students in this class offered no comments, but the others replied as follows:

- "They should be taught manners." (5)
- "They should learn about refugees." (1)
- "We should have a meeting with them." (3)
- "Keep [abusers] out of school." (2)
- "Make friends." (1)
- "Avoid them." (1)
- "Talk to counselor." (2)

C. Juvenile Delinquency and Southeast Asian Refugee Youth.

One of the areas of inquiry for the SARYS study concerns the extracurricular problems of refugee youth who have come in contact with the juvenile justice system as a result of formal processing by police and probation agencies for overt acts of juvenile delinquency or deviance. The analysis that follows is based on an ongoing study of Indochinese delinquents in the San Diego County Probation Department records being conducted by Prof. Ima in collaboration with Dr. Jeanne Nidorf. The data reported below represent the complete record of all Indochinese juvenile delinquents who were formally charged with a crime during 1984 in San Diego County. Selected comparisons with white and other non-refugee minority delinquents are drawn from a 1982 SANDAG study (an Association of San Diego County Governments) using similar coding categories. Since the IHARP study of Indochinese refugees in San Diego County is based on a virtually complete enumeration of this population as of 1983, and on an in-depth data set which includes longitudinal information for 1983 and 1984, this will allow us to rely on IHARP data as well to evaluate the delinquency data against norms established for the general refugee population during the same time period. The organizing questions for this investigation are:

Who are the delinquent Southeast Asian youth?

What are their characteristics?

How do they compare with delinquent youths in other populations?

Why are they in trouble?

What are the prognoses for the future trend of Southeast Asian delinquents?

Among the sample of Indochinese delinquents we identified in Probation Department records, the Vietnamese are the most numerous and beyond their population proportions in San Diego County. This distribution difference is found in other California Counties as well, suggesting that we need to consider differences between Southeast Asian groups, with the Vietnamese and the Lao more likely to commit offenses and the Hmong and the Khmer the least likely to commit offenses. What do the differences in distribution suggest? In conjunction with case files and impressions based on dealing with specific individuals, it is our observation that the different ethnic groups not only perceive deviant actions differently but are differently motivated and controlled by their families and communities. For example, the Vietnamese are more likely to be sensitive to school performances, both success and failure; therefore their successes and failures in school may be more likely to be connected to juvenile

crimes than the other youths. The motivations underlying the other groups are more likely associated with other factors, such as the Cambodians who continue to experience psychologically the trauma of the Pol Pot period which has resulted in mental stress and family disorganization.

Juveniles in trouble tend to be older; this holds for refugees, whites and other minority delinquents. Refugees charged with serious crimes tend to be slightly older than the other delinquents. This issue of age involves more than meets the eye. Frequently refugees are actually older than their officially listed age; e.g., one female Vietnamese student was listed as 13.5 years old but was in reality 20 years old. A common reason for older biological age than formally listed is the longer expected receipt of AFDC monies for the family; since dependent children under 18 years are eligible for AFDC payments, it is to the advantage of families to claim younger ages for children in order to extend the AFDC eligibility time. Although the records do not show a preponderance of erroneous age estimates, we suspect that information seekers have not sought in general to ascertain the refugee's actual age. Therefore, we can only speculate about the actual age distribution and the possible consequences. Already, the refugee serious offender is registered as older than the other youths, and compounding that with a suspicion that they are on the average a year and more older, we are led to speculate about the dynamics of troubles. In one of the few documented cases (in Dr. Nidorf's clinical files), the placement of the youth in a younger age school cohort caused adjustment problems over differences in maturity and interests. In other words, we suspect that "overaged" youths are more likely to experience trouble and consequently law violations. If this observation is correct, then it would seem wise to ascertain the actual age and counsel the overage individual into a more proper socialization placement.

Males predominate among all groups with similar percentages; however among refugees charged with serious crimes, very few are female. However, comparing only juveniles who committed serious offenses, there are significantly fewer refugee females involved than females from the other two groupings. This suggests that refugee females are not only more likely to be constrained and monitored regarding deviance than males, but that the social control of refugee females is greater than that of white and other minority females. This observation closely parallels our findings on school suspensions rates, with males accounting for 92% of all refugee student suspensions, compared to only 77% for non-refugee males. As was also the case with the suspension data--and as is true for delinquency patterns in the general population as well--delinquent refugees increase in proportion as they age from grade school to high school, peaking at the 10th grade level and then falling off at the 11th and 12th grades.

Of those delinquent refugees who were given a language rating by an investigating probation officer, 7.4% were deemed to have excellent command of English, 38.4% a good command, and 54.3% needed translators. Among the serious offenders, none had excellent command of English, 39% had a good command and 61% had a poor command. In general, this delinquent population is in need of translators. We interpret the lack of English fluency as a factor in the likelihood of troubles. This inference may be suspect given the large percentage of refugee youth who remain classified as Limited English Proficient in the schools, and the possibility that some youths may feign ignorance of English as a means of manipulating law enforcement officers. Though the precise role of English language fluency remains to be determined, it seems likely, given the observed frequency of a need for translators, that English fluency remains a candidate factor in exacerbating conditions that may combine with other pressures toward delinquency. The average length of time in the U.S. among the delinquent refugees was 4.6 years. Persons from the first or early wave (prior to 1977) constituted 18% of the youth, whereas the later waves constituted 82% of the delinquents. Among serious offenders, the average length of time in the U.S. was 4.0 years; 24% of them were from the early wave and 76% were from the later wave.

Using evidence such as grades and reports on school behavior, we estimated the school adjustment of 46 youngsters by weighting the numbers and severity of reported difficulties. Of these, 6.5% were ranked as having excellent adjustment, 21.7% as having good adjustment, and 71.7% as having made poor adjustments. Thus, it appears that the vast majority of delinquent refugees have school troubles, despite the generally positive image of refugee youths in schools. Among those charged with serious crimes, 18% had good adjustment and 82% had poor adjustments. Although we do not have hard data on the percentage of refugee youths who are having school troubles, the Vietnamese youth counselor in Orange County, Vy Do, estimates that only 40% are experiencing school troubles. If this estimate is confirmed with hard data, then our inference that school adjustment is a factor in refugee delinquency will be supported. Surely, at this stage, the profile of refugee delinquents reveals school adjustment as a primary correlate if not a causal variable.

Some suggest that school troubles and delinquency are closely connected among all groups, including whites and other minorities. If this observation is correct, then are the dynamics of the interconnection between school adjustment and delinquency the same? Perhaps, but perhaps not. The relating of other groups to the same pattern of refugee delinquency has the effect of trivializing the experiences of the refugee youth by suggesting that

they a part of a universal phenomenon; however, we suspect that though there may be a general pattern across ethnic groups, the specific meanings and the dynamics of how they are interconnected have some important specific differences. Even within the refugee population, we suspect and have some individual case materials that support the contention that delinquency patterns and school troubles differ between the different Southeast Asian groupings. For example, as noted earlier, the Vietnamese are most likely to show a connection between school difficulties and delinquency because they are ones who place a higher value on the role of education. On the other hand, the Cambodians, placing less emphasis on education as a value, are less likely to show a connection between the two. Furthermore, some Vietnamese youth, especially males who have escaped as "unaccompanied minors," are under greater pressure to succeed in schools because of their responsibility to be successful in America so they could send for their parents in Vietnam. Thus the psychosocial/psychocultural dynamics for refugee youth are in many ways unique and call for understanding of that uniqueness as a basis for more effective intervention than under the auspices of a generalized assumption that school failure and delinquency are "naturally" linked.

Refugee youths, especially those involved in serious offenses, are more likely to be associated with gangs than are white and other minority serious offenders. This finding corresponds to case materials which reveal a striking "compulsion" to associate with peers beyond what one expects of other youths. In some instances, peers take on the role of "extended family," especially if an older male is involved; generally that older male will take on the role of "older brother." This urge toward collective sociation is definitely a factor which accounts for a significant proportion of refugee delinquency. There seems to be little motivation among the refugees for "kicks" violations, in contrast to other minorities who are more likely to be involved in physical confrontations; rather, refugee delinquents are more likely to be motivated to gain money and physical possessions rather than to display physical prowess through assaults and other crimes against persons. It is within this proclivity toward acquiring physical possessions that youths collectively violate laws, e.g., stealing car stereos.

Refugee youth are not only more likely to have companions during the charge incident but they are likely to have more companions. This indicates the more collective nature of refugee delinquency than that of other youths. These data correspond to the above observation on the relative importance of gangs among youth. It should be noted that refugee youth do not form gangs in the sense that Blacks and Hispanics form gangs; they do not have formal names, territory, clothing markers and general self-identity as gang members. Rather, they seem to form friendships that are fluid across city lines; this characteristic of mobility distinguishes

them from white and minority gangs who are much more localized and territorial. This mobility means that gang-like associations are not stable, but it also means that they are much more difficult to monitor and control than stable local gangs. The vast majority of refugees' companions are from the same ethnic group. Rarely are they involved with non-refugee youths. In those instances, they are likely to be living away from other refugees, such as in the nearby town of Escondido rather than in East San Diego. When refugee youths do cross ethnic lines, they are more likely to be sophisticated about crime, e.g., a known "gang" of mixed-background refugee youths systematically stole car radios in nearby Coronado and fled back to San Diego, their home base.

Compared with whites and other minorities, we found that delinquent refugees were more likely to live without one or both natural parents. About 41% of refugee delinquent youths lived with both parents or stepparents (compared to 45% of whites and 40% of other minorities among delinquent youths); 22% lived with single parents (compared with 43% of whites and 44% of other minorities); and a significantly higher 37% lived with other relatives or foster guardians (in contrast to 28% of whites and 15% of other minorities). Relative to their home country arrangements, a large percentage of these refugee youths were living in "disrupted" homes; however, the interpretation of what constitute "disrupted" home settings may vary widely. For example, American-born persons may be more likely to perceive single parent households as normal, whereas from the refugee standpoint, single-parent or other such household arrangements (frequently living with a distant relative) are seen as disrupted households by refugees. Over half of delinquent refugees come from such households. Among whites and other minorities, we see the most common arrangement of living with a single parent rather than the strikingly high percentage of refugees living with "others." In one case, a 17-year-old refugee youth was living with his 19-year-old brother who was officially designated as "guardian." Under these circumstances, not only the lower level of social control but also the lack of emotional support from parents create the likelihood of a search for peer association and the troubles associated with unguided youth. In some cases, the youth may end up in Fagin-like associations as a substitute for the lack of parents. We have to be cautious in qualifying these observations, since we are aware of reverse cases -- instances where an uncle may indeed be an adequate guardian or where natural parents may be ineffective and inadequate; nevertheless, the weight of the evidence suggests that the type of household arrangement will be related to delinquency.

An additional consideration in this regard is that although there appears to be a sizeable proportion of youth residing with both parents in their household, it is possible that persons

classified as parents may not in fact be parents. Lying in the refugee community about age, marital status, relationships and so forth is a fairly common occurrence. The common motivation is not pathological but rather a response to the need to survive, which includes lying. For example, one might claim parental status in order to gain admission as a family unit to the United States in spite of being an aunt or other relative, even a non-relative. We suspect that some of those households coded as having both natural parents in Probation Department files may be lies, resulting in an inflated estimate of the presence of both natural parents. Still, of the 63 records of delinquent refugees with data on admissions to the U.S., we found that 73% were accompanied by one or both natural parents and 27% came without either parent. Among the serious offenders 53% had at least one natural parent, and 47% had none. According to Nidorf's case analyses, those youths who come without parents are more likely to experience troubles. Although we are cognizant of the possibility that some, perhaps most, youth who do not live with their parents are not delinquents, and, depending on household situations as well as personal factors, that they are able to successfully adjust, nevertheless, the statistical probability of succeeding for youths who come without parents is less than that for youths who are accompanied by one or both parents. Naturally, the success is also contingent upon background human resources as well as adaptive resources in this country. Our data are insufficient to ferret out a complete statistical comparison between delinquent and non-delinquent youth and the presence or absence of parents; therefore our conclusion is tentative though it is one which strongly corresponds to case materials.

Only 36 juveniles have records of father's occupation or unemployment status. Of these, 25% record specific occupations and 75% record "unemployment." This is especially pertinent because the average length of stay in the United States is over four years, and by that time a higher percentage of refugees have typically found employment. The pervasiveness of unemployment is of course part of the poverty conditions facing many refugee youth. By contrast, only 3% of white delinquents and 16% of other minority delinquents report their father as being unemployed. Moreover, of the 64 guardians whose language ability was recorded, 75% needed translators. Assuming that this approximation applies to the total sample, we have an additional liability of the family's ability to adapt to this country. Not only is the language problem related to poverty, but it is also related to the lesser ability of the guardian to supervise the youth, especially if it is connected to the guardian's unfamiliarity with the cultural ways of American society.

Records usually indicate whether or not the youth's family is receiving welfare payments; however, it was not clear, if the parent was employed, whether or not the family may have

received welfare payments. Therefore the following figures on refugee family welfare status is probably an underestimate. Refugee youths' families are much more likely (83%) to be receiving welfare funds. This is worse than the level for the refugees as a whole, especially since most of the delinquents are Vietnamese and the level of welfare dependency among the Vietnamese in San Diego County is closer to 50 percent. By contrast, 53% of the families of white delinquents and 71% of the families of other minority delinquents were receiving public assistance.

Of the sample of delinquent refugees, 84.4 % had no prior arrest history at the time of their first arrest by police in 1984. Of those with priors, they had an average of two charges -- one individual had 14 charges, thus inflating the average number of charges. During the course of the year, 32.2% were again arrested and obtained subsequent charges, doubling the number from those having priors. Among those with subsequent charges, they had on the average 3.5 charges, an increase of one and a half charges on the average. Among serious offenders, 72% had no prior arrest history; 40% were given subsequent charges, and all of those individuals committed further serious crimes. By contrast, only 35% of whites and 31 % of other minority delinquents had no prior arrest history.

Only about 28% of the refugees were charged with serious offenses, a rate half of that of the white and minority delinquents who were charged with serious offenses. In comparing refugees with other youths, refugees (36%) were about as equally likely to commit serious crimes against persons as whites (38%), but significantly less likely to do so than other minorities (65%). These figures balance the image of refugee involvement with crime by suggesting that, at this time, the refugee youth is for the most part involved in minor crimes, and when they are involved with serious crimes, they are more like white youth in their proclivity to be involved in property crimes rather than crimes against persons. Inferentially, they are less likely to be involved in crime for the thrill of deviance and more likely to be motivated by financial gain. Recently, it has been reported by San Diego probation officers that an increase has occurred in motor vehicle theft by refugees; apparently they steal cars and abandon them soon thereafter. This crime seems to be motivated by the thrills of driving and not for financial gain; however, it remains a crime against property rather than against persons. In general, then, Indochinese refugee delinquency tends toward instrumental rather than expressive action, toward a collective rather than individual orientation to action, and toward property crimes rather than crimes against persons. Moreover, refugee delinquency reflects a greater concern with the

acquisition rather than the destruction of property (e.g., via wanton vandalism).

Finally, on the whole, refugees are more likely to be viewed as having good attitudes toward authority by the arresting police officer. Overall, 65% of the delinquent refugees (and 56% of the serious offenders among the refugees) were rated as having "good attitudes," compared to only 45% of white delinquents and 35% of other minority delinquents. Although a few refugees have learned to challenge authority, for the most part they are responsive to authority. Thus, when they are caught, they are more likely to act remorseful and to deferentially acknowledge the legitimacy of law enforcement authorities, especially as indicated by their "good attitude" rating by officers. This respect and deference for authority is likely to decrease if the youth acculturates to American standards, especially within juvenile incarceration units where they are likely to learn American anti-authority attitudes.

Chapter 6.

A COMPARATIVE ANALYSIS.[†]

The basic research problem addressed by our study concerns the educational and occupational adaptation of Southeast Asian refugee youth. We noted at the outset of this report that strategies for economic self-sufficiency in Southeast Asian refugee communities will rest significantly in the near future with what we have called the "one and a half" generation (those who are born in Southeast Asia but educated in the United States) and later the "second" generation (those who were born and educated here). While we have concentrated, particularly in our quantitative research, on the experience of Southeast Asian youth up through high school or secondary schooling, as a preparatory stage to post-secondary education and employment, it is clear that in the final analysis their prospects for self-sufficiency will depend on the nature of their incorporation in the labor market or in the welfare system.

In conceptualizing their potential trajectories from secondary schooling, one needs to evaluate their **educational** prospects at the post-secondary or college level; their **employment** prospects (in primary or secondary labor markets, or self-employment in ethnic enterprises); and their **economic** prospects (including the pooling of capital, income and labor among family members). The main paths from secondary schooling, depending in part on whether or not the students graduate or drop out from high school, can lead in several directions but ultimately to four main destinations:

- (1) post-secondary education and thence to careers in the primary labor market;
- (2) wage labor in the secondary labor market;
- (3) ethnic enterprise (generally family or self employment); or
- (4) welfare dependency and subsistence outside of the labor market.

In principle, all of these possible paths may be combined with involvement in the informal or underground economy as well, but that possibility falls outside the scope of the present

[†] This chapter is an abridged version of a much longer comparative analysis prepared as part of the SARYS study, as explained in the "User's Guide" to this report. It is based both on the quantitative data presented above and on the full range of our qualitative materials and case histories of Indochinese youth. For reasons of space, our detailed and lengthy case histories are not included in this report, nor is the much more extensive comparative analysis that is based on and refers specifically to those case histories. However, interested readers can obtain copies of the full monograph, including all of the case histories and the fuller comparative analysis, through the Department of Sociology at San Diego State University. See "User's Guide" for details.

inquiry. The main possible paths are sketched in **Figure 6-1**. Although the bulk of our quantitative data focuses on Southeast Asian youth adjustment up through secondary schooling, those indicators, in addition to the information gathered through our intensive interviews with both refugee youth and adult informants, give us important clues on their likely trajectories toward self-sufficiency or dependency. In short, both quantitative and qualitative data provide the groundwork for ascertaining the connections between schooling, family, community and the world of work. It is toward that end that the following comparative analysis is presented.

The quantitative findings reported above provide a portrait of the the educational attainment, social adjustment and occupational aspirations of Hmong, Khmer, Lao and Vietnamese youth. This cluster of outcomes points to the complexity of their adaptation and underscores the need to go beyond unidimensional explanations, since there are no simple linear relations that predict those outcomes. The general analytical model of youth adaptation we proposed in Chapter 1 (Fig. 1-1) argues that adaptation outcomes are shaped by pre-migration characteristics and resources (e.g., social class, cultural values, age and gender), post-migration adaptive contexts (family, school and community), and acculturative processes and coping strategies (attitudes and problem-solving behaviors). We have simplified that model in **Figure 6-2**, as a framework to guide and organize the data analysis that follows. First we will examine pre-migration structural and cultural factors comparatively by ethnic group, and then post-migration factors, all the while relating them to the adaptation outcomes we have already identified.

We began our inquiry guided in part by a social class hypothesis -- that is, we hypothesized that the educational and occupational backgrounds of refugee parents would be the principal predictors of their children's educational and occupational progress in the U.S. -- but we have found some surprising results that do not entirely bear out that hypothesis. The revealed complexity of these results is apparent in the findings on school suspensions, juvenile delinquency and school dropouts, as well as in the findings on grade point averages, standardized achievement test scores, and occupational aspirations. The rank order of adaptive outcomes by ethnicity deviated from the order we would have predicted based on social class resources, raising questions about differential causal dynamics in the relationship between adaptive resources, contexts and strategies.

For example, on both grade point average and standardized test scores, the Vietnamese and Chinese-Vietnamese rank at the top, followed by Hmong in the middle, and by Khmer and Lao students at the bottom. A similar rank order is found on the selection of careers, with the Vietnamese and Chinese-Vietnamese more often aspiring toward the higher status professions,

Figure 6-1. Potential Trajectories in Education, Employment, and Self-Sufficiency.

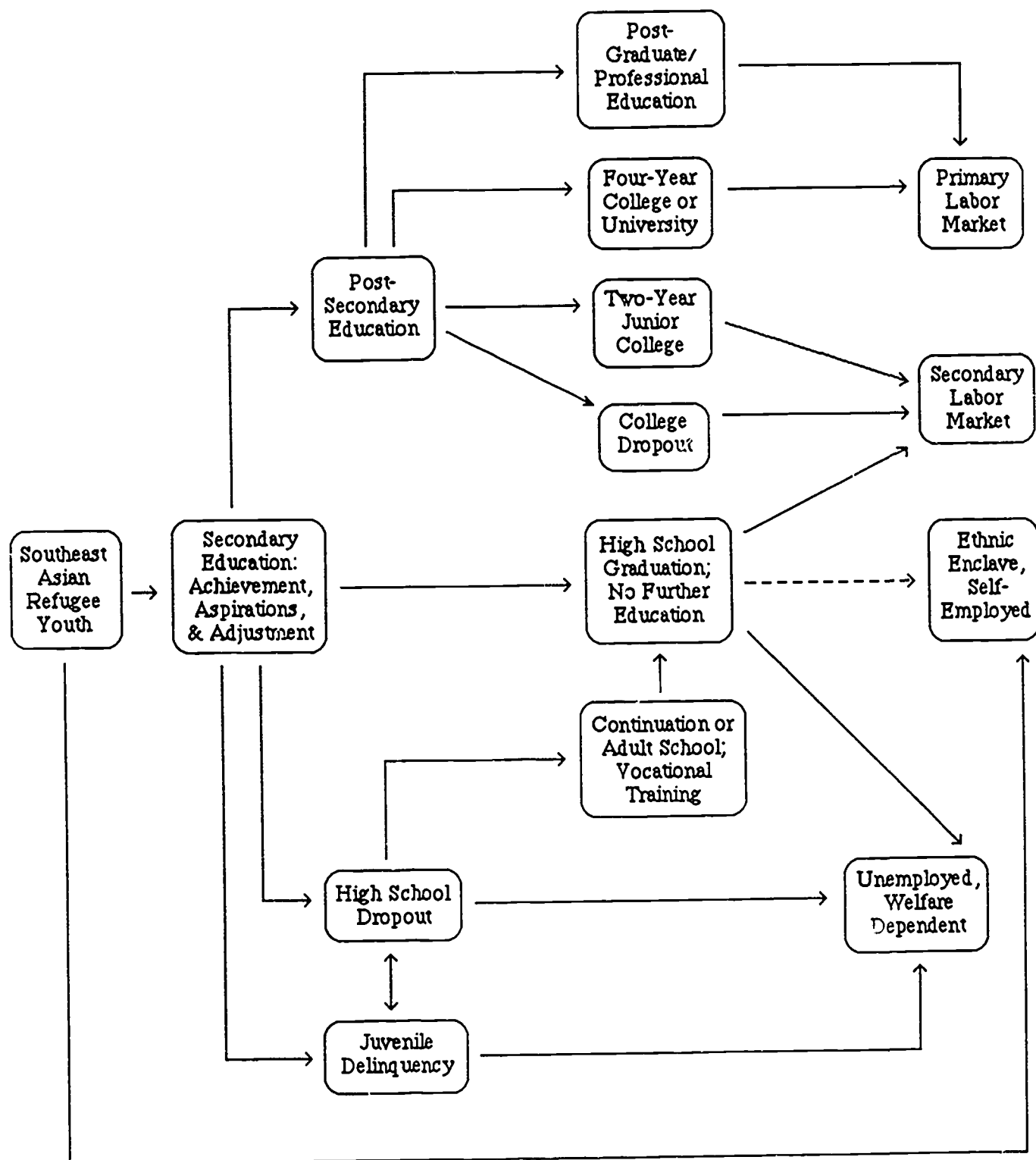


Figure 6-2. Factors Shaping Self-Sufficiency Outcomes.

	Pre-Migration	Post-Migration
Structural	Social Class Kinship	Family Schools Ethnic Community Ethnic Businesses
Cultural	Ethnocultural Values and Beliefs	Acculturation Coping Strategies

again followed by the Hmong, Khmer and Lao. Precisely the opposite ranking is evident among students selecting blue-collar jobs in industry and construction, with the Lao and Khmer being most likely to aspire to those occupations, followed by the Hmong, and lastly by the Vietnamese and Chinese-Vietnamese. The Khmer and Lao, who have the lowest GPAs and achievement scores, disproportionately selected careers in low-status white-collar occupations, such as clerical work and personal services. The Khmer are also more likely than other groups to select careers in helping professions such as health care and social service. Their occupational aspirations reinforce the conclusion that it is noteworthy to investigate these ethnic differences further, and the mechanisms which differentiate them from each other. These findings alone are sufficient to require that we explore the role of cultural values and other contextual factors, rather than focus solely on pre-migration social class resources.

But additionally, the different ethnic rank order on such indices of social adjustment as school suspensions, delinquency and dropouts leads us to consider still other factors in order to explain the nature of these refugee youths' coping strategies and adjustment outcomes. On both school suspensions and delinquency, the Vietnamese and the Lao exhibit the highest rates of juvenile deviance while the Khmer and Hmong have much lower rates of such behaviors. Thus, among Southeast Asian youth, the Vietnamese as a whole are at once the highest academic achievers and the most ambitious in their career aspirations, yet they are also more likely to be reported and sanctioned for violating school rules and public laws. The Lao, by contrast, are about as likely as the Vietnamese to be suspended from school and arrested for juvenile delinquency, yet they are also the lowest academic achievers and the least ambitious in terms of their occupational futures. We also find that the Khmer are by far the most likely to drop out of high school, followed by the Vietnamese, the Lao, and finally the Hmong -- who are least likely to withdraw from high school. The Hmong, nevertheless, as we will show below, despite their surprisingly high level of attainment at the high school level and the fact that they exhibit the lowest rates of juvenile deviance on all of our indices, also have by far the greatest difficulties making the transition from high school to post-secondary schooling, and are more likely to opt for early marriage and family formation -- and possibly, therefore, for early reliance on public assistance. These different rank orders of outcomes suggest that adjustment predictors and processes are more complex than implied by a model which predicts outcomes solely on the basis of parents' human capital and social class resources. In what follows we make an effort to address and analyze that complexity comparatively, and to provide a more complete explanation for the rank order of outcomes identified above.

A. Pre-Migration Resources: Social Class and Cultural Characteristics.

While social class differences still explain many of the patterns of achievement that are observable among Indochinese refugee youth, both between and within ethnic groups, other factors clearly need to be taken into account to explain the reasons for the lower Lao and Khmer levels of attainment, and for the much higher than expected performance of Hmong students. Earlier in Chapter 3 we identified a set of predictors of GPAs and achievement test scores, based on a multivariate analysis of our quantitative data. Now, going beyond that analysis, we have identified other key factors through our qualitative research. These are: (1) cultural and structural patterns of family organization -- especially vertically vs. horizontally organized kinship systems and the resulting differences in orientations toward authority and in discipline and control over the young; (2) ethnoculturally patterned coping strategies -- that is, distinctive attitudes and approaches to problem-solving; and (3) the nature of the "fit" between these cultural and structural characteristics and the competitive contexts of school and work in the United States -- a "fit" which may or may not generate functional advantages for these groups in achieving economic self-sufficiency. Following the simplified framework shown in Figure 6-2, pre-migration social class and cultural factors will be elaborated first in this section.

At a general level of analysis, we begin with the following observations: The three groups who exhibit the highest levels of educational attainment in U.S. schools--the Vietnamese, the Chinese, and the Hmong--also exhibit some commonalities in their patterns of culture and social organization; whereas the two groups who exhibit the lowest patterns of attainment--the Lao and the Khmer--also exhibit certain sociocultural similarities. In general, the Vietnamese, the Chinese-Vietnamese and the Hmong (hereinafter called **VCH**) reflect what we might call a Confucian or "Chinese model" of social life, whereas the Lao and the Khmer (the **LK**) reflect more of an "Indian model." Put differently, we might call the VCH "**Indochinese**" and the LK "**Indochinese**."

The VCH are based on vertically-organized, hierarchical, patriarchal, highly disciplined extended-family systems (and the Hmong on clan systems) which instill deeply felt norms of filial piety and ancestor worship. In fact, ancestor worship (and associated customs, such as death anniversaries) may be seen as but the ritual form of filial piety, which is followed by the VCH almost unquestioningly as a natural obligation of respect that is owed to parents, grandparents, and deceased ancestors. These norms of deference (which for the Vietnamese especially are pervasively institutionalized and coded in the language and in the complex use of pronouns which demarcate a person's social status), in turn, are part of a system of mutually

reciprocated obligations--including the expectation of extraordinary parental self-sacrifice to ensure, in the U.S. context, that the children will go as far as possible in pursuit of their education (cf. Duong, 1981, and Huynh, 1987, for Vietnamese refugee perspectives on these cultural themes). These forms of social organization not only provide a strong sense of cultural-historical continuity (and hence stability) that pervades social life, but it also creates a structure of pressures (e.g., constant parental push, supervision and control) that translates into high educational achievement outcomes among the young--and which also controls the expression of juvenile deviance, except in those cases (such as detached minors, non-intact families) where the family organization is weakened or absent as a function of the post-1975 refugee diaspora. In addition, they also shape collective family-based economic strategies for "self-sufficiency," including the almost automatic expectation that the incomes of family members will be pooled and turned over to the parents in certain proportions/amounts depending on the circumstances. In effect, these pooled-income strategies represent the "payoff" of the parents' investment in their children's higher education.

In general, furthermore, the VCH reflect an adaptive style that is active, pragmatic and instrumental, based on a work ethic of personal effort ("moral character" as opposed to "talent") and an "internal locus of control" orientation to problem-solving (even when coping strategies are collectively-based within the family). But it must be underscored that such **cultural** values (including the emphasis on education) are anchored down and made possible within compelling, duty-bound family **structures**. And it must also be added that their particular combination of sociocultural resources--which historically evolved, at least in part, as an adaptation to conditions of material scarcity--seems to work particularly well in the competitive American educational and economic systems. Thus, we predict, net of social class differences, the VCH groups generally will end up steadily "gaining ground" over time, relative to the LK, in their incorporation into the American society and economy.

Of course, among the VCH it is clear that the above-mentioned organizational and cultural resources of the Vietnamese will interact with their much superior social class resources to give them the greatest edge for "success" in the U.S. The Hmong occupy an intermediate position, largely because of the relative absence of social class resources of the parents (even though in those cases where parents had some educational advantage or other human capital, that difference is positively reflected in the children's attainment patterns); instead, family and clan organizational resources may be more predictive of future "self-sufficiency" outcomes, despite the obstacles posed by the demography of this population as well as by the severely disadvantaged labor-market position of the first generation. Clan and family structure is

manifested most notably in the discipline and attention Hmong youth give to authorities, especially teachers. They are highly motivated to avoid negative sanctions and will go to great lengths to avoid shame and to protect their "face" and family name. In this respect there is a functional affinity between their cultural orientation toward authority and the relatively authoritarian nature of American primary and secondary public schools, as well as some work settings. Nevertheless, as suggested below, despite the promise they have shown through high school, the Hmong face an array of still other problems that may seriously undermine or diminish the potential for "success" of the "1.5" generation of Hmong youth.

By contrast, the Lao and Khmer (the LK) share many sociocultural elements which differ sharply from those of the VCH. For example, the LK (as well as the Thai) generally share a common religion (Theravada Buddhism) and common linguistic and cultural roots. Perhaps more importantly, the LK do not have patriarchal extended family systems like the VCH. Instead, family organization tends to be more nuclear, neolocal, bilateral and female-centered. Where one finds extended families among the LK, they tend to reflect optional and individualistic rather than obligatory or deeply institutionalized commitments. This is nearly identical to the patterns found in neighboring Thailand by Piker (1969:64): "There is considerable evidence that the villager views continued association with his families of orientation and procreation at least in part in voluntaristic terms. Our field notes contain numerous examples of individuals allying themselves with opponents of their families in disputes or, in other cases, simply declining to become involved." (See also Embree, 1950; Evers, 1969; Potter, 1977.) Several of the Khmer respondents we interviewed, for example, illustrated this perspective by asserting their need to establish a household separate from their parents, reinforcing the idea of family relationships as conditional and voluntaristic, based on individual feelings rather than collective obligations.

In general, among the LK there tends to be a looser sense of discipline and obligation that pervades all social life--not only outside the family (as in brittle Lao "patron-client" relationships, based on ever-shifting, contingent and negotiable notions of "loyalty," which tend among other things to undermine the potential for collective problem-solving strategies), but within the family as well, including both parent-child and husband-wife relationships (cf. Haines, 1985). As Piker (1969) observes of the culturally similar Thai: "First, if the villager considers the intentions of others to be unknowable and quite possibly harmful, this does not at all preclude casual, *ad hoc* association of an agreeable sort. Indeed, the majority of village social encounters fall into this category and, if their pleasant quality implies no commitment that transcends the duration of the encounter, still the villager may rely confidently on the ubiquity

of opportunity for interaction in this idiom with his fellows. Second, the villager is acutely sensitized to wealth and influence gradients which he often exploits with consummate skill to maximize his own security and comfort. In practice this means that patron-client relationships play an important, perhaps dominant, role in village social life. These relationships, to be sure, are no less brittle in individual instances than other types of relationship." (For relevant discussions of the contrast between Indian and Chinese models of social life in Southeast Asia, see Embree, 1950; Woodside, 1971; Keyes, 1977; Evers, 1969.)

In the case of husband-wife relationships, the LK seem to reflect less binding and more exogamous marital commitments, and in the American context at least (where marital stress increases for all refugee groups as a function of the radical life changes imposed by the resettlement process) they are more prone to divorce and separation than the VCH. (It should be immediately added here that none of the Southeast Asian groups consider divorce as legitimate an alternative to marital conflicts as do Americans--perhaps least of all the Vietnamese--but relatively speaking, the LK are more susceptible than the VCH to such options.) The case of Bopha Roath, a young Khmer woman we interviewed, illustrates this point with her decision to seek a divorce based on the lack of love -- on feelings rather than obligation. The ease with which Bopha is able to get along with Americans, her openness to and use of Americans as role models, her individualistic emphasis on feelings and emotional needs, and thus her quick adaptation to American ways of "psychologizing" about themselves and others -- all of this probably reflects the Khmer proclivity to create an emotional mutuality with Americans not yet matched by the other refugee groups. The consequence of this affectively-oriented viewpoint manifests itself in her decision to divorce her husband -- regardless of the gossip and social pressure she might encounter in the Cambodian community -- based not on his lack of material devotion but rather on her deeply felt sense that "love" and emotional fulfillment no longer exists between them.

Consider, by contrast, the case of Tuyet Cuong, a 24-year-old Vietnamese woman whose husband had left her the year before for another (American) woman. She has been strongly pressured to remain married for the sake of the family -- and the level of social control is such that she has not dared to confide her feelings to any other Vietnamese, not even trusted friends or older female counselors. Since her husband has recently ended the affair, claims to be repentant and wishes to return to the marriage, Tuyet's parents feel that it would do the least damage to the family name for her to accept him back. On the other hand, she had been so emotionally devastated by his betrayal and infidelity that she has not been able to forgive him, feels she cannot trust him again, and wants him out of her life. Nevertheless, she considers

her parents' demands for reconciliation as legitimate since they are her parents, whom she is obliged to respect. This creates a dilemma for Tuyet: should she act on her personal feelings or should she act on family obligations? She is inclined to accept her obligations, therein illustrating the difference between Vietnamese priorities and the more typical Khmer choice of seeking fulfillment of personal needs and wishes, as in Bopha's case. Herbert Phillips' observations of the Thai, a similar sociocultural group, reinforces this depiction of the Khmer: "Yet when these same people leave each other's presence they behave in a strikingly different manner... They readily permit personal impulse, diversion, and unforeseen circumstance to take precedence over commitments they may have undertaken in the face-to-face encounter. They often pay little attention to the rights, obligations, and responsibilities which are supposed to form the substance of enduring relationships; the relationships themselves are uncertain, as are the underlying factors upon which they are based. The peasants even offer a Siamese maxim to sanction these tendencies: 'To follow your own heart is to be a true Thai'" (1969:29).

In parent-child relationships, again one finds looser social controls among the LK, less discipline (including less parental push and pressure to achieve), looser filial piety norms and a weaker sense of obligation to parents (one should note here the absence of ancestor worship among the LK). All of this seems to account, based on our anecdotal evidence, for the greater susceptibility we have found among Lao teenagers in particular to peer groups and to American youth subcultures (e.g., we found a noticeably greater prevalence of Lao "punk-rockers" with purple hair in San Diego high schools than is apparent among the other Indochinese groups). Vietnamese parents or guardians are much more likely to feel a right to "suggest" career selections to their children, such as the case of an interviewed Vietnamese parent who insisted that his child pursue a medical career regardless of the child's feelings. Khmer and Lao parents, by contrast, feel that career choices are the domain of their children. In most of our Khmer interviews, parents have had little say in their children's career selections and, in point of fact, they are often lacking in the sophistication required to guide their children adequately into the world of work.

To be sure, there are many important differences between the Lao and the Khmer -- most notable, in their adaptation to American life, being the serious psychosocial consequences for the Khmer of the aftermath of the "killing fields" of Kampuchea during the Pol Pot period, including high levels of family disorganization, a high prevalence of widows and single-parent arrangements, and elevated rates of depressive symptomatology and dissociative cognition. Still, relative to the VCH, the LK are more likely to favor individualistic over collective strategies of adjustment, to base such strategies on feeling rather than obligation, and to rely on

separate households (with "fictive kin" quickly moving out of the crowded households that are typical in the early phases of resettlement toward more nuclear/neolocal arrangements, especially among the Khmer), and on separate budgets (rather than pooled-income strategies). The fluidity of Khmer household composition was observed frequently during our field work of Khmer individuals who were seeking to form households separate from their family of orientation. In addition, the LK generally reflect an adaptive style that is typically found in Theravada Buddhist societies--that is, one more passive and reactive, less pragmatic, more fatalistic ("external locus of control") and more oriented to recreational values than to an ethic of personal effort and hard work. Associated with the Khmer world view is the emphasis on the law of Karma, reincarnation and the consequences of prior lives on the present, which in part is manifested in the lack of competitive aggressiveness of the Khmer, especially within educational and work contexts. Indeed, compared to the VCH, there appear to be few strong mediating structures among the LK that will be able to promote and ensure the attainment potential of the coming generation.

Perhaps this applies with greater accuracy to the lesser educated and the rural-origin Khmer, since among the urbanized/Westernized elite their interpretation of Buddhism seems more in accord with the Vietnamese emphasis on the responsibility for action in this life rather than the acceptance of good or ill as a result of prior lives. Both the educated Vietnamese and Khmer reflect values derived from the Catholic French middle class which "places high value on the individual's ability to raise his status in life by direct and practical means of secular education and economic advancement. It stresses active rather than passive aspects of achievement and the accumulation of material wealth as a means of achieving both personal and social ends" (Steinberg, 1959: 272). It is our observation that human capital and social class resources, where they exist, will be the independent variables most predictive of "success" for and within the Lao and Khmer groups--and indeed, a few leading individuals among the Lao and Khmer (typically from upper-class backgrounds) have already emerged as effective "cultural brokers" and actors within American institutional contexts. However, unlike the most highly educated "first wave" Vietnamese refugees who were disproportionately resettled in the U.S., it appears that the well-educated Lao (and some Khmer) elites were more likely to have resettled in France rather than the U.S., and that many educated Khmer were killed in the 1975-79 period in Kampuchea. Consequently, the Khmer and Lao whom we have observed tend to combine lower class resources with sociocultural elements that are less likely to combine to produce "success" in a competitive American context. Indeed, the net effect, we predict, may well be a growing bifurcation between a small group of "haves" and a large group

of "have nots" in LK communities. This latter group will end up steadily "losing ground" in their incorporation to American society.

Even at that, the general loosening of parental control and domination is more evident among upper-class Khmer families we have observed than it is among upper-class Vietnamese. Consider the following case materials: In an interview with three daughters of a former Khmer high government official, they told about their relationship with their parents, which resembles some of the patterns of upper-ranked Vietnamese families -- at least in the sense that the relationship has entailed close supervision by parents and acceptance of parental authority, especially in regard to selection of mates. (Lower-ranked Khmer, by contrast, would be less likely to accept parental selection of mates and in general are less likely to accept parental domination.) The four older siblings of these three Khmer women had their marriages "arranged" by their parents, and they accepted the parental arrangement process as legitimate. They did not see it as oppressive and described it as entailing their involvement in the selection process -- parents will choose eligible candidates but they have the right to approve. The bottom line is the mutual acceptability of the mate. They described the pool of candidates as a circle of intimates or fictive kin -- people of similar social rank and familiarity. They claimed that this process leads to love and that love does not have to precede this process. These three Khmer young women do not have the right to date or go out with boys outside of the courtship process implied above. Nevertheless they have had experiences of going to school dances with boys because the dances are defined as part of the school program. Otherwise their parents would prohibit their attending dances. The close supervision process seems to be balanced by the implicit agreement that they are free to do what they wish, even in violation of their parents' opinions, as long as they do not make their actions known to their parents. One example is the wearing of bathing suits. Their parents do not accept this practice, and yet the daughters wear bathing suits at the local beaches. Their parents do not know they have bathing suits, nor have they seen them wearing suits at the beach. There seems to be a sense that these Khmer youth are free to practice their individualism as long as they can isolate potentially conflicting worlds. In any event, they are motivated to find solutions compatible with their own personal inclinations.

These observations on some apparent similarities in parent-child relations among educated Khmer and Vietnamese groups suggest that both accept the role of parental authority on mate selection and marriage issues, but the underlying implementation of those wishes by the Khmer are more likely to manifest deviance from parents' wishes while appearing to be compliant. We have no doubt that the children of the upper class Khmer will do well in American schools,

but these observations emphasize those cultural differences which give the Vietnamese a greater likelihood of doing well in competitive educational arenas, since they maintain tighter social control over their children at all class levels. The result is a greater collective obligation and a lesser emphasis on individual feelings among the Vietnamese across the range of social classes. In contrast, only among the higher class Khmer will parents be likely to main a similar level of social control and compliance, especially in regard to educational achievement and occupational mobility.

In conversations with children of other Indochinese elites, they described some similar strategies. In these instances, the elites have combined Western and traditional practices with considerable flexibility and without a sense of irreconcilable differences. In their home countries they were encouraged to learn foreign languages, dress in foreign clothes, and otherwise acquire Western manners and styles. At the same time, they maintained, under the veneer of modernity, the legitimacy of parental authority -- such as the right of parents to have the last word. As an upper middle class Vietnamese woman raised in a Westernized home in Saigon explains the nature of her relationship with her parents: "Like if my parents accused me of something wrong and I was innocent, then I am allowed to tell. Most of the family, they're not allowed to tell them that I am innocent. They have to receive the punishment anyway. But I am allowed to tell them, no, I did not do that. I did this, but still in a very respectful way. You still have to use all the tone, the polite tone. And if they still don't accept my idea, then I still have to go with their idea. I would think they are right, and I am wrong. At the end, I always go with their ideas. I expect mine, but if they explain to me that no, that's not the way they think, then... I would submit... emotionally, not only because I am scared but because I respect them."

Thus the paradox seems to be the ability of upper class families to juggle both Western and traditional cultures through the development of a sophisticated biculturality which lower ranked individuals are less likely to develop. In the lower ranks, individuals seem to have a more rigid approach of conceptualizing the cultural conflicts in either/or terms, resulting in either subordination or development of separate households. The upper class individuals have a greater facility in rationalizing apparent contradictions and thus the greater likelihood of sustaining the connection between parent and child, even in an American context where rapid acculturation by the young is accompanied by intergenerational conflict. One Vietnamese high-status parent put it this way: "We need to outsmart our children since we don't want to seem too physical or arbitrary." This psychological sophistication of giving children a sense of

control over their lives while at the same time retaining final control gives these parents a greater facility in managing two cultures.

In sum, the combination of all of the sociocultural elements described above seems to explain many of our quantitative and qualitative findings on the adaptation of Southeast Asian refugee youth. For the urban Chinese and Vietnamese, it is clear that they value education greatly, and that their higher level and quality of education in South Vietnam is commensurate with their present performance. As one Vietnamese respondent said regarding her concentration on grades and achievements: "Personally... that was the only thing I could do." For most Vietnamese youth, life is centered around getting an education and achieving the social status that accompanies it, even while this single-mindedness may leave them feeling unfulfilled in other areas of their lives. Personal preferences tend to be subordinated to perceived collective priorities. On the other hand, the rural highland Hmong have not been traditionally oriented toward education and have, on the whole, much less education than Khmer or Lao refugees. Hmong fathers, on the average, had less than three years of formal schooling, and Hmong mothers less than a first grade education. Why, then, more specifically, using the educational background of parents as a measure of the social class resources of students, would Hmong children do so well compared to the Khmer and the Lao, given both the relative and absolute lack of schooling among Hmong parents?

Our interviews reveal the Hmong to possess high levels of social control over their youngsters and our Hmong respondents typically evidenced that discipline over their own personal lives emanating from parental demands. Despite the dearth of education in their families, teachers are impressed with the tenacity of Hmong youngsters and their preoccupation with doing assignments "right," while even appearing "slow" for asking so many detailed questions on how to complete assignments. Theirs is a concretized approach not heavily dependent upon abstract explanations. Some San Diego school teachers talked about the exceptional compliance of Hmong students with teachers' requests, which in turn motivated the teachers to give them better grades. Still, the higher overall Hmong performance on standardized achievement tests (especially in math computation, where they rank well above the American national average, and in math applications and language mechanics, where they rank at the national norm) suggests that their grades are merited on substantive grounds and go beyond teacher bias. The low CTBS reading vocabulary, reading comprehension, and language expression scores of Hmong students are offset by their higher math scores which, based both on our data and on our experience, are much better predictors of GPA than are reading and language scores. One Hmong counselor suggested that Hmong children are raised

to be extraordinarily responsive to authority, and once told what to do they will carry out their projects without complaint, contrary to the recalcitrance shown by other students. This tenacity reflects a level of Hmong discipline which supports their ability to get above average GPAs and standardized math scores.

We should also add that these comparative differences in learning styles have been observed independently even by first and second grade teachers of Indochinese youngsters in California schools. These teachers have spontaneously reported to us their perceptions of behavioral differences between Vietnamese, Hmong and Khmer children in the classroom. Vietnamese and Hmong second-graders, for example, are reported to be quiet, serious, task-oriented, diligent, extremely attentive to the teacher and respectful of rules and authority; by contrast, Khmer children are perceived to be bright-eyed, smiling, expressive, curious, easily distracted, their attention short-spanned and wandering about the classroom rather than focused on the teacher, more concerned with peers than concentrating on the tasks at hand. Khmer children appear to be encouraged to verbalize feelings and to place high value on doing what they are individually inclined to do. These cultural differences in discipline and orientation to authority are thus already learned and present by the first and second grade -- suggesting the importance of early childhood development for later educational achievement and reflecting something of the dynamics of how children are being formed in particular family organizations.

The Hmong respondents' attitudes resemble the Vietnamese emphasis on collective obligations, especially toward parents -- that is, on filial piety norms and values. Moua Yang, a young Hmong man we interviewed, married early (in his senior year in high school) because his grandmother requested that he produce new offspring. Deng Vue, a 19-year-old Hmong male, married when he was 17 years old because his parents (especially his father) insisted that he marry a Hmong female he had accompanied on an unsupervised 30-minute walk outside of her home; he did not particularly like or love his wife before his marriage, nor does he now, but he accepts his parents' decision. This acquiescence to parental demands is a pervasive theme throughout our Hmong interviews, yet one would be hard pressed to extrapolate them as emulating Vietnamese and Chinese tendencies. Up through secondary schooling, the Hmong seem to be highly disciplined and achieving good marks -- high GPA, good math CTBS scores, low dropout rate, low suspensions rate, and low juvenile delinquency rate. Solely based on this information, we might predict the Hmong to be a very successful case.

Yet it is also clear from our ethnographic research that, beyond secondary schooling, the Hmong are not succeeding. Deng, the Hmong male forced to marry early, achieved a cumulative 3.3 GPA in high school but has a problematic future. Already in less than two

years he has had two children, and he is still under 20 years of age. He is currently enrolled in an adult ESL class (as a condition of his welfare assistance) with little substantive plans for further training and a job. He is disappointed about his marriage and the lack of educational and other opportunities resulting from the fact that he is married. This is a case where a good GPA has not guaranteed future self-sufficiency. Our case study of Boua Cha, an 18-year-old Hmong female, provides a similar example of relative failure after high school, but one compounded by the gender issue. Boua was a highly talented and promising student whose prospects for success seemed assured, given her academic attainment (good GPA and test scores), admission to college, assured financial assistance, teacher and other adult support, self-confidence, and a vow not to "blow her chances" -- yet she married hastily during the summer after her high school graduation and moved to Fresno with her husband. If young Hmong males have problems in moving toward self-sufficiency, then Hmong females are at double jeopardy in making such a move. Boua's case exemplifies both a gender issue and, more generally for the Hmong, their cultural time scale which, while productive [at least from a Western educational standpoint] up through secondary schooling, discourages additional preparation beyond high school, resulting in long-term limits to self-sufficiency.

Both cases illustrate a tendency noted by observers of and informants from the San Diego Hmong community. There are relatively few Hmong in local 4-year colleges and universities, numbering less than a dozen in all of San Diego County (not counting junior colleges), in contrast with the higher numbers (both absolute and proportional) of Khmer and Lao youth entering post-secondary training. This last observation suggests a reversal from the secondary school pattern of higher Hmong performance to a lesser level of participation at the post-secondary level. Why does this reversal occur? Can we rest with the explanation that it is a traditional cultural pattern emanating from their customary notions of early marriage and child production? Or are there some structural factors at work?

B. Post-Migration Adaptive Contexts: Family, School, and Community.

We have conceived of "adaptive resources" as pre-migration characteristics facilitating the refugee adaptation process, and "adaptive contexts" as post-migration social structures within which refugee youths are making their way to adult lives in the United States (see Figure 6-2). Thus a Vietnamese boy may bring all the home-grown cultural values of family with him but he may not have an intact family here. We wish now to ascertain not only how the resources they bring affect their adjustment, but also how, once in the United States, they are able to convert

their resources into actual accomplishments within specifiable contexts. How does the central institution of the family function to facilitate or to constrain the attainment of educational and occupational goals? How does the politics of gender and parental control affect family organization and thereby self-sufficiency outcomes? How do schools, ethnic community organizations and ethnic enterprises promote or constrain the potential of refugee youths for successful adjustment? We begin with a comparative analysis of the effects of family size, composition and organization among Vietnamese, Hmong and Khmer refugees in San Diego.

1. Family Contexts.

The comparatively higher suspensions, juvenile delinquency and school dropout rates of Vietnamese youths suggest that not all of them have succeeded. Interviews within the Vietnamese community have identified both youth without parents in this country and those whose parents have difficulty supervising them as potential "at risk" candidates. Duc Huynh, one of our Vietnamese respondents, is an example of a youth living without parents who is having troubles adjusting to his circumstances in this country. When he was 16 years old, he was sent to Kampuchea with the Vietnamese army and after a year escaped to Thailand. He left and arrived in the U.S. with no family members, leaving behind both parents and other siblings. As a youth without parents, he has had considerable difficulties adjusting to this country. He has been associated with Vietnamese youth gangs and has even gone into hiding in Mexico with a gang after an incident in which they were marked for retaliation. During the time he lived in Mexico, he met and married a Mexican girl with whom he had a baby. He is now desperate for work -- more particularly, for money -- to afford to care for his wife and child. Although he had some education in Vietnam, he is unable to find a job which pays enough to support his family. His English remains poor and his job skills are limited, though he expresses a willingness to work hard with his hands.

Ngoc Truong, another youth separated from his parents, has had little supervision here but has had extensive relations with Vietnamese peers, especially those seen as part of Vietnamese gangs. Being without a family, especially for a Vietnamese youth, is a critical structural condition which will shape the prospects of successful adjustment, generally on the poorer side. This prospect exists even given his successful educational accomplishments in Vietnam and his belief in the importance of continuing his education here. Instead he finds himself in a constant struggle to find money to support his wife and child and has recently filed for welfare

so his child could receive medical treatment. Prior to his marriage he was considered to have a street reputation as someone who would not be pushed around. Whenever others confronted him, he did not back down but instead protected his reputation. This emotional and aggressive response to insults was also expressed by Van Le, a successful Vietnamese medical student. One might find this observation curious, but it points out a common thread running through Vietnamese youth: their proclivity towards racial pride and an aggressive response to perceived slights. This proclivity is manifested in their highly competitive spirit -- something which, for the Khmer and Hmong, would be deemed immoderate and unseemly, since they tend to avoid confrontation and public "excesses." This tendency is reflected in the above reported response of Vietnamese youth to racial slights, especially at the junior high school level. The discussion of Vietnamese school suspensions reinforces this interpretation of the aggressive character of Vietnamese youth. Van Le deals with his aggressive tendency by avoiding situations which would arouse that tendency; this strategy of avoidance was encouraged by his father who never let Van forget that his primary goal in life was to assist his family. A Vietnamese school teacher also commented on this same problem of racial insults and has consciously counseled his son to avoid such confrontations. Duc Huynh, the above-mentioned Vietnamese youth without parents in this country, has had no such guidance in the U.S. and is likely to get into fights over insults. The significance of the Duc Huynh case is that not all Vietnamese arrive with intact families and consequently arrive without a resource which provides a foundation for educational success and adjustment.

The point is not, of course, that all parentless youngsters will fail but rather that for the Vietnamese, the family is such a central institution that there are no real substitutes for it. There are exceptions, such as the case of Xuan Tran, a Vietnamese college freshman living with an Uncle and Aunt who have served effectively (if not without conflict) as surrogate parents and help the youngster make the transition into self-sufficiency. Nevertheless, without an intact family, the chances for success diminish measureably. In Xuan's case, the combination of his own effort and abilities, social class background and a strong surrogate family organization has led to exceptional educational success so far. But the earlier cited evidence on conflicts at school between Vietnamese and American students as well as the Vietnamese delinquency data document the greater likelihood of troubles especially for Vietnamese youths without intact families. Among some parentless youngsters who actively affiliate with the Catholic Church, there is a recent research report which suggests that the church provides guidance for those youth and increases their chances of success (Do, 1987). In these particular instances, detached youngsters are given adult guidance and role models. But, there seems to be an overwhelming tendency for parentless youngsters to seek each other out for companionship

and support in the face of Vietnamese community hostility towards them and the lack of alternative social support networks. Many of these youth mention how they rely on peers as if they were relatives and could be asked reciprocally for almost any favors, including participation in crime.

Ngoc Truong, the Vietnamese young man mentioned above, illustrates the parentless youngster situation well. Ngoc came to the United States at age 19 expecting to continue his schooling and has relied on peers for financial and other assistance from them. Here, there was not the same level of support in the form of family. The support network of interdependent youth extracts its price of demanding reciprocity without providing a disciplined motive to complete schooling and settling down. Rather, the values of youth peer groups emphasize the present and the consumption of material goods without regard to long-term consequences. They desire flashy new cars, expensive clothes, being with beautiful women, and giving off an air that they did not have to work for these signs of material affluence. Thus, although Ngoc can claim to have a set of reliable peers, his participation in those networks draws him away from his original plans of going to college. He finds himself in a never-ending money-losing cycle and with few prospects of accumulating enough funds to complete his educational goal of becoming an engineer. **By contrast, the disciplined structure of intact Vietnamese extended families reinforces opposite tendencies toward frugality and reduced personal consumption (e.g., not eating out or going to movies, wearing older, less expensive clothes, purchasing used cars), the pooling of money for educational and long-term instrumental gains (e.g., buying a home, starting a small business), and the insistence on completing professional training.** The end result is the financial wherewithal to complete post-secondary schooling and the support crucial for entrance into the primary labor market or for entrepreneurial alternatives.

The large, intact Vietnamese family typically insists on keeping its youngsters at home when they are not at school; siblings thus take the place of playmates, friends and tutors, and therefore the seeking of peers outside the household is reduced and controlled. In many cases, Vietnamese youth from larger intact homes named siblings as their best friends and role models. These families combine multiple social functions -- friendship, study hall, counseling and guidance, child care, banking, entertainment, relaxation, emotional gratification -- all under a single roof. Our quantitative analysis identified the presence of two-wage-earner-parents in a household as a predictor of higher GPA; this association adds to our argument that the strength of the youth's household, be it intact or with two or more wage earners, is a structural factor facilitating the youth's move toward self-sufficiency. The University of Michigan study of

Southeast Asian youth also found a relationship between larger Vietnamese families and academic achievement scores, supporting these observations (Caplan et al., 1986).

However, we should not be deceived by the simplicity of the family size variable for several reasons. First, although larger family size may be transformed by the Vietnamese into a net asset within an alien competitive postindustrial context, there are numerous contingencies which qualify size as a multiple-purpose resource. Second, the Hmong cases of large family size lead to an opposite conclusion: that larger families may become net economic liabilities and be less likely to ensure the transition to post-secondary education and self-sufficiency for academically-oriented students. Further, all our Vietnamese, Khmer and Hmong youth respondents indicated their intention to plan significantly smaller families than their parents', signaling their own appraisal of the issue of family size as an asset or a liability in the American context.

We are aware of the over-simplification in the contrast between Ngoc Truong, the parentless youth case, and the Van Le case of a Vietnamese young man with a large and basically intact family. We are also mindful of in-between cases where both parents are present but the youth is having troubles. Many of these cases are described by Vietnamese social workers as situations "where both parents work and cannot supervise their children." Associated with those cases are instances of delinquency and of some youths having troubles staying in school. Nevertheless, these more clear-cut cases provide us with "ideal types" from which we have been attempting to sort out the parameters and dynamics of youth adjustment. The intact families represent situations where refugee parents are able to transfer the traditional system of social organization into the new setting, whereas the parentless youth represent cases where traditional family organization has been broken. The attempt of the Catholic Church to organize youth guidance groups is an innovative local solution not usually found back in Vietnam (see Do, 1987). In short, we have been examining whether or not refugee youths are placed in homes and communities which retain the functional integrity of native social organizations, or settings where either innovative solutions are created or youths are left to their own devices for creating order in a new society. We have not been able to specify the full range of innovations or contingencies which modify traditional modalities of social control. We have, however, been able to spell out the consequences of the polar forms of broken and intact family situations, and have begun to sketch the varieties in between.

The Hmong community, among all of the refugee groups, appears to be the most successful in retaining its traditional forms of organization, including family and clan. Their low rates of suspension, low rates of delinquency, and low school dropout rates reflect the

continuing effectiveness of Hmong social control over its youth. All Hmong informants emphasize the theme of parental control: "We parents must be strong about our children. If they do wrong, we punish them by hitting them or by not giving them favors. We don't make empty threats. The children know what is right and what is wrong." Even Moua Yang, one of the most acculturated of the Hmong informants, continues to emphasize parental control, as exemplified in his decision to place his child in a special magnet school so that the child would not be influenced by "bad" playmates. Though some parents have experienced conflicts with child abuse laws and child protective agencies, they continue to feel that they have the right to control their children. One Hmong informant observed that in Laos, parents even had the right in extreme cases to kill their child and not risk sanctions from Hmong society. Needless to say, they do not think that way in the United States but they continue to seek ways of protecting their authority to control their youth. When those "rights" are perceived to be undermined or threatened, Hmong parents react with great anxiety and fear of losing control. In contrast to the Vietnamese community, there are few if any "parentless" Hmong youths since clan members will accept the responsibility for orphans or unaccompanied minors and incorporate them into a family structure, almost without regard to whether the child is "close" or "distant," as the Vietnamese would define it. If Hmong parents have trouble controlling their youngsters, they consult with other family members, and if need be, they raise the issue with clan elders who, in general, support the parents' efforts. Parents whose children join gangs or whose appearance approximate "punk" styles, are themselves pressured by kins and clansmen to assume their responsibility to control their youngsters. Thus the Hmong build a solid wall of control that contains and constrains Hmong youths, who cannot escape it. In sum, the Hmong community through family and clan claims responsibility for all its youth and, as a collectivity, closes ranks around the rights of parents and adults to control youngsters.

This persistence of traditional social control contrasts strikingly with the Lao and Khmer communities, which have, by comparison, seemingly lost control over their peer-oriented youngsters. As one Lao parent recites his weariness in controlling his child: "Our children no longer respect us. We are embarrassed to let others in our community know about our children who do wrong. We don't talk about those things with each other." Thus, Lao and Khmer parents approach the social control of their children as a family-household matter and not one of community concern and involvement; i.e., they individualize rather than collectivize social control. They do not reinforce each other as adults who have collective rights over their children in the manner that Hmong adults presume. This difference in social control over youngsters helps to explain particularly the higher rates of school suspensions and juvenile delinquency among the Lao. The lack of parental control, however, does not explain the low

rate of Khmer delinquency and suspensions. Rather, there are cultural differences between the Lao and the Khmer as well as differences in their migration histories and refugee experiences that differentiate them from each other -- and that help to account for the different patterns of social adjustment among Khmer and Lao youth. These differences and other explanatory factors will be explored below.

The sum of our field observations leads to an increasingly more complex portrait of refugee youth adjustment, especially the process of linking adaptive resources and strategies to outcomes within cultural and institutional contexts. Thus for example, the same autocratic family discipline that may help account for Hmong patterns of achievement in secondary schools also brings with it several dysfunctional consequences. For example, we have found that early marriages among the Hmong are not so much a function of cultural desirability *per se* but rather of the politics of parental control -- which result in threatened Hmong parents forcing a young couple to marry at the very first instance of unconsulted dating (even, in the case of Deng Vue, a mere 30-minute walk), and also in devalued and subordinated Hmong girls feeling pushed to seek what they perceive might be emotionally more satisfying alternatives outside the parents' household. In fact, one of our Hmong respondents, Cheng Xiong, pointed to what he saw as a "*tragic waste of talent*" among the Hmong, due not only to (1) coerced early marriages that lead young people to drop out of school (and to consider more seriously the welfare option), but also to (2) the lack of college-level Hmong role models, coupled with (3) an occasional xenocentric "inferiority complex" that leads other Hmong to drop out of college after one semester (especially when they fail to cope effectively with the greater freedom of the much less structured college environment), and (4) a prevalence of short-term planning -- evidenced in the recent mass moves north to agricultural areas of Fresno and Merced Counties, in search especially of cheaper housing and a lower cost of living, but at a long-term cost of undermining the educational and occupational futures of their children, since young people will likely have fewer opportunities for jobs or schooling in those areas than will those Hmong youth who remain in large cities such as San Diego. Furthermore, we have observed very rapid sociocultural changes taking place in gender roles within all of the ethnic groups -- changes which, while producing considerable intra-familial conflict, may nonetheless end up elevating the heretofore subordinated status of women in these groups and thereby enhancing their prospects for future economic self-sufficiency (e.g., in terms of lower fertility and higher participation of women in the labor force). Indeed, as our case histories and qualitative interviews make clear, the whole issue of gender stratification in these communities is complex and needs to be interpreted variously in both public and private spheres of social life.

Instead of the problems Hmong females face, such as being regarded as not worthy of investment as they approach marriage age, Khmer females consider themselves worthy of investment. During a recent Khmer conference, a 23-year-old Khmer female spoke about her feelings on how she thinks about her own future. She has been here only six years, without parents, yet she now feels confident that she will be successful in America. Currently she is a social worker for the Khmer community. She related how she was sponsored by an American family and spoke no Khmer for two years because there were no Khmer speakers around. In her third year she found Khmer speakers and has since been speaking with Khmer people. She insists that the old ways of female subordination are not for her. She has been told to get married by other Khmer but she has refused their entreaties since she feels she must finish her education first and establish her own independence. Anna, a 22-year-old Khmer woman, during the course of an interview expressed distaste for the very idea of marriage, and said she would get married only if her parents forced her into it. She objects to marriage because (1) it probably will be full of fighting between spouses, (2) children bring a financial burden which detracts from making it in America, (3) the man will demand everything from her, and (4) the role of wife in Cambodia was unfair and she doesn't want that to happen to her: "I prefer to live alone rather than have someone tell me what to do." She is willing to acknowledge the right of her parents to be involved in the marriage process, but she also indicated that the consequences of marital trouble would be largely an issue of how it affects her feelings and less of what it might mean for the family's reputation. This stands in sharp contrast with the Tuyet case (cited above), the young Vietnamese woman who is being pressured into remaining married to her unfaithful husband because her parents are concerned with the social stigma of divorce and the loss of the family's reputation in the Vietnamese community. Women are given less control over their lives among the Vietnamese than they are among the Khmer.

This public sentiment of Khmer gender equity, though it may seem dramatic at least relative to the Vietnamese and the Hmong, is actually commonly expressed by many other Khmer females. This notion of equality, though not overtly expressed by older Khmer, appears in fact to be an underlying practice. What the refugee experience has meant for many young Khmer women has to do with their underlying sentiments about equity and the legitimacy of individual choice -- sentiments given overt support by prevailing American values, as frequently expressed by American teachers. Their ease in proclaiming ideas of gender equity in public, in contrast to the Vietnamese, suggests that the norm of public subordination of females is weaker among the Khmer.

Far more consequential to the immediate situation of the Khmer is the structural and emotional devastation of Khmer families resulting from the aftermath of the Pol Pot period. Figure 3-11 documented one consequence: approximately 50% of the IHARP-SARYS Khmer families consist of single-parent female householders, and nearly 25% of Khmer women are widows (cf. Rumbaut, 1985a; 1988). It is not only the absence of one or both parents that has had a devastating impact on the problem of Khmer parenting, but also the emotional depression common among Khmer parents, guardians and the children themselves (see Kinzie et al., 1984, 1986; Sack et al., 1986; Nidorf, 1985; Carlin, 1979). One worker in the Khmer community observes the pervasiveness of "post-traumatic stress" among parents resulting in their "not caring" for the young or simply their inability to pay attention to their children, which in turns becomes reflected in their children's poorer academic performance and relatively greater likelihood to drop out of school. Except for two of our Khmer respondents, all the others lived in Kampuchea through the experiences of the Pol Pot period, and all suffered physically and emotionally. Those respondents all mentioned their frequent nightmares, their inability to forget those terrible days, their breaking into a cold sweat whenever they hear unfamiliar sounds which trigger thoughts of those traumatic days.

It has been reported that divorce was rare in the pre-Pol Pot era among the Khmer (Steinberg, 1959:85), but the same fluidity and looseness of household arrangements we noted above seems to be now beginning to affect Khmer marriages in general. Given the larger numbers of females, particularly widows, without male companions, there are reputed to be Khmer males who "make the rounds" visiting lonely Khmer women. Into this atmosphere there appears to be a rising number of divorces and separations undermining the already reduced stability of the Khmer family. This is particularly noteworthy since traditional Khmer norms heavily sanctioned those who violated sexual mores and those who would seek a divorce. Our multivariate quantitative analysis in Chapter 3 -- which identified the mother's characteristics, including her level of psychological depression, as a major predictor of her child's academic achievement -- is certainly in accord with our field observations. Hence, the level of academic attainment of Khmer youth, and their transition to economic self-sufficiency, are seriously hindered by the unstable character of disorganized Khmer families and of depressed parents. An accurate estimate of the consequences of the Pol Pot period on Khmer individuals and their families has yet to be done, but these observations on its impact on Khmer youth -- including their higher than average dropout rates and their academic troubles completing school -- are alarming. Some Khmer couples are reputed to have divorced because the trauma of that period was so devastating that they have lost the capacity to love, to work, and to care for each other. In this respect too, we conclude that the family context, and the

issues surrounding it, such as gender and parenting roles, are fundamentally important in shaping the adaptation of refugee youth.

2. School Contexts.

What is the structure of the school environment and how may it affect refugee student adjustment? We are aware of the research literature on schools and on the role of schools as a factor in educational attainment, and the debate sparked by Coleman's famous study (1966; cf. also Parelius and Parelius, 1987) which concluded that the family, not the school, was the major determinant of occupational success. Since that time a spirited public debate has continued on the role of schools (cf. California State department of Education, 1986). Although the SARYS study did not measure variations in educational services or in the specific school experiences of our youth sample, we cannot ignore making some remarks on the nature of schools, for otherwise we would leave the reader with the misleading impression that outcomes are totally a result of the characteristics of individual refugee students and their parents. In this section we will consider briefly such issues as differences between and within schools, school staffing and curriculum, sponsorship of students by teachers, and race relations, as these may affect Southeast Asian refugee students in San Diego public schools.

Variations Between Schools. The socioeconomic characteristics of the neighborhood surrounding a school covary systematically with academic attainment; i.e., the higher the socioeconomic characteristics, the higher the academic attainment of students, whether measured by GPA or standardized achievement tests. Within our sample, we found refugee parents making comments on the quality of schools, a consideration which affected their decisions on where to live. Although it might be debated, on sampling or other grounds, whether or not the school itself explains higher academic outcomes, we do find that Southeast Asian students are more likely to display outstanding performances in schools located in higher socioeconomic status (SES) neighborhoods. Still, the fact that most refugee students are poor and reside in lower socioeconomic areas of San Diego means that they are more likely to matriculate at schools with lower overall academic achievement scores. Although some students are bused from lower income neighborhoods to schools in higher income areas, the vast majority of refugee students matriculate in the schools where they reside -- poor to lower middle class areas.

Variations Within Schools. Even if we were able to control for the socioeconomic characteristics of a school, there are questions to be raised about variations of educational services within a school. These questions usually center around the phenomenon of "tracking," whereby some students, usually those with higher socioeconomic characteristics, are given more advanced training while others are relegated to lower levels of training. This criticism of tracking has often been made by advocates of Black and Hispanic youngsters. Does tracking occur for refugee students as well? If so, does it undermine their level of schooling outcomes? Unfortunately, we were not able to measure at least quantitatively the type of educational treatment received by our subjects, but from the qualitative interviews, especially with the Hmong youth, it became clear that they were placed in a "bilingual track" which put them in classes with lesser academic standards. One might debate whether or not this was desirable, given the level of English language competence of the student. Examining the Vietnamese cases, we see that the Vietnamese were much more likely to have been placed in mainstream classes, especially those that were "college preparatory." Within our sample, we observed considerable variation in the segregation and mainstreaming of refugee students. Those with higher social class profiles and those who exhibited traits such as speaking English well and being able to interact well with Americans were more likely to be placed in mainstream courses. Those with the greatest likelihood for such preferential treatment were the Vietnamese, reflecting their higher level of sophistication in dealing with modern educational bureaucracies.

Another pattern of educational expectations we have noticed is the greater likelihood of placing refugee students in advanced math and science courses but a lesser likelihood of such placement in English-language-based courses. This is partially a reflection of the exhibited skill levels of refugee students, but it is also a reflection of the expectations teachers have set for these students. Thus, in the case of Deng Vue, a Hmong youth, we see that he has never exited out of ESL courses and is currently taking an ESL course which is too easy for him, even though he graduated from high school with a good GPA. In a sense, both refugee students who are seeking a path of least resistance, and teachers who are overwhelmed by the language needs of their students, take the easy way out by not paying as much attention to English language development as might be rendered to students who require and demand special attention.

Staffing, Curriculum, and Acculturation. An additional problem facing schools is the lack of bilingual and bicultural professionals who might bridge the gap between refugee students and the mainstream American world. Even refugee professionals who have had years

of experience in their home country have difficulty obtaining the requisite credentials which would give them access to teaching and other school roles in the United States (Cheng and Ima, 1987). Instead of qualified refugee teachers, "aides" with lesser qualifications are hired, often on a temporary part-time basis, and the resulting services reflect their lesser bilingual and bicultural skills. The role of the more qualified refugee teacher would be to provide a bridge of understanding at a level which is next to impossible to develop given the understandable proclivity of lesser trained aides -- who are also in vulnerable low-wage non-permanent jobs -- to acquiesce to school authorities, thus unintentionally making victims of refugee students. In addition to providing communication linkages, qualified refugee professionals could provide role models and counseling to refugee students.

The more general issue of bridging cultural gaps and the consequences on academic attainment is not simply one of establishing communication and understanding. It is also an issue of cultural values and choices which both the youth and their parents must face. The inability of school personnel to grapple with the nuances of cultural values weakens the effectiveness of schools as humane and effective service providers. Regardless of how school officials view cultural differences and what policies they may enact to address these differences, if any, we observe changes in the children and expect that these changes will affect their families and communities. The public schools do, as they have since their inception in the mid-nineteenth century, play a key role in the "Americanization" of young newcomers. Boua Cha, the academically successful Hmong female, for example, recites reading a series of novels at school which affected the way she thinks of her mother and of herself. She thinks sadly about her mother's hard life as paralleled in the Chinese woman's life of Pearl Buck's novel **The Good Earth**. She expects and dreams her life to be happier without the hardships of her mother. This expression of feelings would seem unduly sentimental to older Hmong generally. And she thought, at least for a short while, that she should help her family, deviating from the expectation that she would have to abandon all sense of obligation to her family of orientation when she marries. The thought that she could "violate" the traditional female role by sticking by her family of orientation is a seed that has been planted and an idea that probably will resurface in her future. Boua similarly was moved to reflect on issues of social injustice and to apply these ideas to her own life -- from the prejudice she sees directed against her by non-Asians in American society to the inequities suffered by women within Hmong society -- by her reading of the novel **To Kill a Mockingbird**. Perhaps in some significant way, Boua has been changed by the impression those readings, and others in the school curriculum, have made upon her.

All of the refugee youths we interviewed commented on the adjustment difficulties of their first years of schooling. Everything seemed troubling, including their not understanding English, differences in learning and teaching approaches, and dealing with American youths. The school's response to these students is to place them in bilingual programs consisting of a wide array of options, including individual learning programs, pull-out programs, regular English immersion programs, and primary language classes. For the most part, students are given a minimum of primary language instruction, perhaps at most 40 minutes per day, and are expected to acquire English as quickly as possible. The model for these language programs is the Spanish bilingual program, which is based on the assumption that there is a correspondence between the child's primary language and the English language. For Spanish, an Indo-European language, this assumption is not unreasonable; but for the Southeast Asians, particularly those without any previous exposure to Indo-European languages, the assumption is very unreasonable. For example, the verb forms of Spanish and English are closely related, since they can use the same Latin-based verb paradigm; but the various Southeast Asian languages do not have similar verb forms with the English language. In effect, Southeast Asian children, even if they have had some schooling in their home country or refugee camps, face a cultural and cognitive barrier whose dimensions are difficult to explain to someone who thinks the gap between Spanish and English is large. For example, English uses "hypothetical" verb forms such as "might have been," "could have been," "would have been," etc.; these conditional verb forms are not found in most of the Southeast Asian languages, and hence their usage is extremely confusing to the refugee child learning for the first time the English language. Even for refugee adults who have been highly educated in American schools continue to have troubles with those verb forms, and as a consequence have had difficulty passing American tests for certificates (see Cheng and Ima, 1987).

Thus language and its implied cognitive requirements pose a barrier for refugee youths and their future prospects for self-sufficiency. The results reported earlier of the language portion of the CTBS achievement test (i.e., the low reading and vocabulary scores) reflect the difficulties noted here. Thus far, bilingual programs have not fully understood the larger language and cultural gap facing Southeast Asian youths compared to that of those facing Hispanic Limited-English-Proficient (LEP) students. Added to the language difference are the differences in teaching and learning styles of American and Southeast Asian countries. In the latter, rote learning and mechanical memorization is the rule, with little room for the expression of individual opinions or "critical thinking." One of the outcomes of these language and learning barriers is the narrowed range of occupational aspirations of refugee youths for careers which emphasize math and science skills rather than language-based skills. Teaching, law,

management and other occupations requiring higher levels of English communication skills will remain out of competitive reach for most refugee youths of the "1.5" generation; their choice of computer programming, engineering, accountancy, biochemistry, and other math- and science-based careers seem quite sensible in this light. Nevertheless, the continuing difficulty with the English language will extract its toll by limiting future job opportunities for these youth, even the most highly educated, by creating an early career plateau.

Sponsorship. Turner's well-known study (1960) of social mobility raises questions about the role of teachers and institutions in "sponsoring" refugee youth up the social ladder as opposed to letting the open and unassisted competition between youth be the determining basis for promotion -- what Turner termed "sponsored" versus "contest" mobility. Our youth interviews included questions about special teachers who may have made a difference in the refugee youth's educational attainment. Several of our respondents mentioned the role of some teachers in encouraging them. Without more data, it is difficult to ascertain the pervasiveness of a special student-teacher relationship among the refugees and how that would compare with non-refugee students. However, in our interviews with school teachers and in listening to them at various in-service workshops and meetings, there emerged a common theme of liking and showing special attention to many refugee students. For some teachers, "their" student becomes a personal project and a projection of their accomplishment to the world. One teacher, for example, stood up in a public meeting and recited the accomplishments of her "A" student who, only three years prior, knew no English. What is the nature of such sponsorship and what difference does it make for the student's post-secondary prospects and experience? The secondary teachers provide encouragement, special tutoring and letters of support into post-secondary institutions; thus they do function to help place them in better colleges and universities. On the other hand, their praises, at times excessive, may lull some students into thinking that they have "made it," only to discover into their early college years that they are behind in English. Nevertheless, the pervasiveness of teachers' comments about "special" refugee students raises questions about the sponsorship role of secondary institutions in the educational placement and success of refugee students.

Race Relations. Earlier in our discussion of school suspension rates we concluded that refugee students were affected by the racism shown by other students and staff toward Southeast Asians. The pervasiveness of name-calling and even physical confrontations based on ethnic-racial grounds was discussed by many our respondents, though not fully explored. Almost all of the respondents have experienced some form of racism in the U.S., and many have been affected deeply by it. Sophy, one of our Khmer respondents, in her assessment of

what she saw as the American racial system, concluded that no one who is not white can ever really become an "American." It is difficult to summarize the diversity of their responses to American racism since our respondents vary considerably in their skills for handling it. Among the successful refugees, they somehow manage to avoid troubles by "turning the other cheek" or simply by not getting into confrontational situations in the first place. The level of racial incidents begins in the elementary grades, dramatically increases in the middle years and peaks at about the tenth or eleventh grade. For some youths, especially the Vietnamese and the Lao, confrontations result in a search for companions who can thus help protect themselves from aggressive non-refugee classmates. In some of the cases we found in the Probations Department data, juveniles reported joining peer groups initially for protection, but once in those groups a switch in interests occurred away from school toward peer preoccupations for having fun and material indulgences. Parentless youths are the most susceptible for such "gang" involvements, though it should be noted that the majority of those troubled youths come from homes with one or both parents. In the latter cases, parents are usually working or are so incapacitated by their own troubled adjustments that they are no longer able to function effectively as social control agents. The cases of parentless Vietnamese youth cited earlier document the consequences of poor or non-existent adult supervision. In effect, then, racial confrontations affect most those youths who are poorly or not at all supervised by adults, by diverting them away from an academic focus to a peer-group orientation, and thence into lower academic achievement. But whatever the range of their responses, it is clear that Southeast Asian refugee students have been subjected in recent years to pervasive racial prejudice within the public schools, reflecting more general anti-Asian attitudes in the wider society, and that this is a factor which exacerbates the problems of their adjustment.

3. Community Contexts.

Beyond the social contexts of schools and families, what role does the larger ethnic community play in the lives of these youth? Each Southeast Asian community has formed educational organizations -- e.g., the San Diego County Vietnamese American Parents and Teachers Association, the Lao Educational Foundation of San Diego -- and at a minimum, every year they each have an awards ceremony recognizing the outstanding achievements of high-performing students. The most developed of these groups is the Vietnamese organization, which recently gave awards to over 200 Vietnamese students in the 7th through 12th grades who had earned a 3.8 or better GPA and a good citizenship mark. At the

ceremony, Vietnamese professionals -- including teachers, lawyers, physicians, and university professors -- gave out the awards and congratulated the youth for their accomplishments, serving as highly visible role models in the process. An exceptional award was even given to a mother who drove every Saturday nearly 100 miles roundtrip to bring her daughter to the Vietnamese Saturday school; this was a recognition for the parent's contribution to her daughter's education. It was difficult to come away from the ceremony not sensing that education is a deeply important and collective affair for the Vietnamese community.

The Vietnamese Catholic community has formed several youth groups whose activities focus on choir singing, scripture readings and recreational outings. Detached Vietnamese youth are found among these youth, which is notable since the expressed purpose of these groups is to keep youth out of trouble and to counsel them to be good Catholics. The outcome for many detached youth is the creation of partial parent substitutes in the form of priests and other Vietnamese adults. We have no estimate on the pervasiveness of such groups and the numbers of Vietnamese or other youths being served, nor do we know their precise effects on behavioral outcomes, although a recent study suggests some significant positive consequences (Do, 1987). Nevertheless, Vietnamese adult leaders are happy with these groups and they are felt to be part of the Vietnamese system of adult moral control.

The Hmong, although they have their own educationally oriented groups, have the equivalent of a system of morality monitoring and control through their clan organizations and the associated individual extended families that form the local clans. As one Hmong school counselor noted, "we agree about what is right and wrong and we support each other." In contrast, the Lao community is generally seen to be in trouble collectively in its ability to control its youth, as indicated by our data on school suspensions, the increasing numbers of Lao youth in the juvenile probation system, and the increasing caseload of the Lao youth diversion program. As one Lao community leader observed, "Lao parents are embarrassed to talk about the troubles they're having with their children. Because of this, we Lao do not support each other on standing up to our children. They are running over us." In contrast, when issues of parental control arise, the Hmong clan elders discuss the case at length and provide parents with collective moral support. When a Hmong father had his daughter taken away by the local Child Protective Services agency, his clan discussed his case to see what he could have done and should do in the future. When it was decided that they could do nothing against the civil authorities, they gave sympathy to the parent. These observations on Hmong community organizations underscore the fact that these refugee families do not live in a vacuum, and in many ways, must pay heed to their reputations as they might be discussed and

labeled in those larger meetings. The general impact of these organizations is that they create pressures influencing parents on how they should handle their relations to their children. The children, likewise, are aware of the moral sentiment of the community and the agreements among elders which support parents. It is not unusual, in cases of alleged juvenile deviance among the Hmong, for those youths to be subjected to a meeting of extended family members who attempt to "shame" the youth into conformity with expected standards of behavior.

Although the Khmer community is generally less well organized than the Vietnamese and Hmong refugee groups, the felt weight of the Khmer community is nevertheless real. During a recent public session on Khmer youth, the son of a pre-Pol Pot leader, an Americanized Khmer, admitted that he along with other pre-Pol Pot Cambodian refugees avoided contact with the post-Pol Pot refugees because they were embarrassed by their accents and non-American ways. In other words, they wanted to place some distance between themselves and the recent newcomers due in part to their desire to be accepted by American peers -- and in part to maintain previous social class distinctions. Now, some years later, he regrets not having extended help to them and vowed to extend help to his fellow Khmer. He expressed the sentiment of "owing" to other Khmer the responsibility of extending his assistance, even to those who are unrelated by "blood" or family ties. This notion of an obligation to others is manifest in the notion of "fictive kin" which the Khmer use frequently, much more so than the Hmong, Chinese and Vietnamese refugees.

This is a critical distinction between these cultural groupings and has implications for their adaptation strategies. The horizontally organized, peer-oriented Khmer are able to rely on a wide network of both kin and non-kin individuals, whereas the vertically-organized family-oriented Vietnamese are able to rely mainly on extended family members or on occasional peer groups in the case of unaccompanied minors. On the other hand, the Khmer help network is not necessarily consistent or always dependable, and there are instances where individuals fall through their flexible nets. The Vietnamese kin networks, where intact, provide more reliable insurance for social and economic support. This difference means that adaptation is contingent on both their attitudes toward social support networks and on the specific constellation of individuals who might provide help. In other words, the Khmer community is seen as an alternative to family, or perhaps more accurately stated, the Khmer seem to have a proclivity to draw kinship lines loosely and widely. The limited aid provided by the wider community reflects its essentially affective character rather than one which delivers material goods and services, or one that is more instrumental, such as that which characterizes the Vietnamese, the Chinese and the Hmong.

Khmer respondents commonly invoked the concept of "the Community" with a tone of reverence akin to the manner in which Vietnamese respondents talked of "the Family." Perhaps this phenomenon is related to the traditional Theravada Buddhist practice of establishing a record of merits, usually good deeds to the village pagoda, and conceive of the "community" as a vessel into which good deeds are to be placed (cf. Steinberg, 1959:272). The San Diego Khmer community is still small enough so that any Cambodian in meeting another Cambodian is likely to have some mutual Cambodian friends. Within this urban village there is a gossip network which regulates people's reputation, but its power would be impotent were it not for the assumption that the "community" is a sacred and real entity which they must take into account. Some individuals who "violated" the trust of other Cambodians suffer the consequences of defective reputations years after the reputed violation occurs -- e.g., they are still being talked about, being avoided. The consequences are sufficiently severe such as to make individual Khmer hesitate to act too rashly for fear that their name will be tainted. Although the community does not have a sophisticated relationship to the local power structure, thus lacking an effective instrumental dimension, Khmer individuals have a strong desire to promote the social solidarity of their community as an emotional center for local Khmer.

The Khmer community has a school associated with the older of two Buddhist temples (each temple, incidentally, consisting of a "house" in a low-income neighborhood purchased through the small but collective contributions of the community). Although the school's level of activity and sophistication does not match that of the Vietnamese and the Hmong community organizations, they do offer weekly classes in the Khmer language. The general disorganization of the community, probably reflecting both the low educational level of the population and the continuing reactions to the traumatic Pol Pot experience, has led to a low profile in terms of setting the educational tone for its youth. The immediacy of poverty and depression has placed education on a low priority level. The associated high level of Khmer school dropouts and the continuing emotional crises among the population suggest the need to address counseling and intervention on emotional issues as an immediate first priority over (or at least in tandem with) educational interventions.

The "system" shaping access to jobs among refugee youth was partially revealed in our interviews, though our understanding of it remains incomplete given our informal knowledge of the refugee economy. The Khmer students had access to jobs available through minority youth programs and all had access to part-time work available to minority youths applying to colleges. The selection of post-secondary schooling and occupations reflects greatly varying access to individuals and other sources of information about such matters. Vietnamese

respondents had by far the most complete and sophisticated information. For instance, the older siblings of Quy, one of those respondents, had already gone on to college and secured employment (including even some high-status jobs), and Quy's relatives had established contacts with American professionals who sometimes were even invited to their home to share their expert knowledge with their college-bound children: Quy was thus demystified and well-informed about university and career possibilities and the associated steps toward them. The Khmer had access to such knowledge mainly through friends, and this was reflected in their career selection process -- e.g., picking the community college route rather the four-year college or university route, about which they knew much less about. But perhaps more importantly, the occupations they picked were either lower status jobs, since those were the only ones their friends personally knew about (e.g., electronics assembly), or they were ones they knew little about; e.g., Narong, one of our Khmer respondents, picked "electrical engineering" because the words seemed most closely to fit his interests in electronics, but he would be happy to be running an electrical repair shop. Even though the occupational aspirations data show the Hmong as being more likely than the Lao or Khmer to pick higher status math- and science-oriented disciplines, as do the Chinese and the Vietnamese, our intensive interviews generally reflected little precise knowledge of the job world among Hmong youth. They knew few individuals or role models who were actually working in the fields they selected. In general, the most commonly mentioned job experience about which the refugee youths had direct knowledge was electronics assembly, which is essentially a low-wage semi-skilled factory job -- and also the modal job held by their parents in the U.S. so far (cf. Rumbaut, 1986). Usually they hear of jobs through friends or relatives who work at the same plant. This system of informal information networks is their major source for job announcements, rather than the more formal channels such as official refugee employment or vocational training programs.

Within the Southeast Asian communities, the Vietnamese and the Chinese-Vietnamese have the best access to self-employment and jobs in the ethnic economy. Refugee businesses are dominated by those two ethnic groups -- mainly because of their prior business backgrounds, and because their families and coethnic organizations provide the requisite access to the labor (often their sons and daughters) and start-up capital needed to start a small business. By comparison, scarcely any Lao or Hmong enterprises are in evidence in the local area, and the few Khmer businesses typically are run by Chinese-Khmer entrepreneurs, who reflect the same sort of prior familiarity with business as do other ethnic Chinese from Indochina. In part, the attractiveness of these jobs in the ethnic enclave is that the refugees do not necessarily have to know English well, since their supervisors and co-workers all speak the same native

language. In addition, many of these jobs pay close to or below the minimum wage, and the conditions of work are frequently poorer than might be found in "regular" employment; nevertheless such employment provides a more accessible source of income to the refugees which, in many instances, can remain as unreported income, providing the employees with the opportunity to continue to receive welfare payments on top of that wage, while at the same time benefiting the co-ethnic employers by providing them with a source of cheap and dependable labor on which their small businesses can survive and even thrive. An additional benefit of such employment is that it provides information and training for future work, such as learning the ropes of the garment industry or restaurant trade, which might lead later to self-employment in those industries. (On the structure and function of ethnic enclaves and their critical importance in understanding the incorporation of certain immigrant and refugee groups in the U.S., see especially Portes and Bach, 1985.) The IHARP study of Indochinese refugees in San Diego documented the prevalence of ethnic employment especially among the Chinese-Vietnamese (about 50% of all employed Chinese-Vietnamese refugees in San Diego in 1984 were either running their own small businesses or were employed by a coethnic), and to a proportionately lesser extent among the Vietnamese (see Rumbaut, 1986, 1988).

C. Adaptive Strategies: Acculturation and Coping.

So far in this analysis we have considered the influence of various pre-migration social characteristics and post-migration social contexts on the adaptation of refugee youth. In this concluding section we focus attention on the acculturative processes and coping strategies of refugee youths themselves. That is, here the focus shifts to a view of refugee youths as active subjects struggling to make their way and to determine their future circumstances, rather than as passive objects acted upon and determined by their past or present circumstances.

Acculturation: Age, Generation, and Adolescence. Southeast Asian refugee youth who form what we have called the "1.5" generation face two salient issues: (1) adolescence and the task of managing the transition from childhood to adulthood, and (2) acculturation and the task of managing the transition from one culture to another. Their "coping strategies" consist largely of their responses to the combination of these two crisis-producing and identity-defining life transitions. By contrast, the "first" generation of their parents, who are fully part of the "old" world, face only the latter issue; while the coming "second" generation of youth, who are born and reared in the U.S. and as such become fully

part of the "new" world, will really need to confront mainly the former issue. But the "1.5" generation of refugee youth form a distinctive cohort in that in many ways they are marginal to both the old and the new worlds, and are fully part of neither of them. Still they need to define themselves somehow both with respect to their society of origin, to which they may never return, and to the adoptive society where they are being formed, which is itself rapidly changing. In this sense, this generation of "1.5ers" share a common psychohistorical actuality.

We have, however, identified important age differences **within** this "1.5" cohort -- generally involving those youths whose age at arrival was pre- vs. post-puberty (or roughly younger than 12 or older than 15 at arrival in the U.S.). Earlier we noted our quantitative finding that GPAs and achievement scores varied directly with time in U.S. schools but inversely with age. However, that finding needs to be qualified, since it is based on observations made within a relatively short time span involving 1.5ers at different school ages. Time in the U.S. has a different effect--and meaning--depending on age at arrival. The older 1.5ers (post-puberty at arrival) are more handicapped by language deficiencies, and they have had less time to "learn the ropes" of the new system; whereas the younger ones (pre-puberty) are not so handicapped, given the fact that a greater proportion of their lives has now been spent in the U.S. At the same time, however, the older 1.5ers generally seem to have more of a motivational edge (a "refugee ethic"), such that the younger ones, even though their English and their knowledge of American society is better, become less driven and less single-minded in their pursuit of school and work goals, and thus ironically less apt to reach the levels of attainment of their more motivated and harder-working older siblings.

It is also clear that such motivational dynamics vary significantly not only by age of arrival and immigration status, but by ethnic group and gender, reflecting key differences in culturally patterned coping strategies that will be explored in more detail below. Our case histories do illustrate how these processes are occurring within single families, with some siblings arriving post-puberty, others arriving pre-puberty, and still others just in-between. In some cases involving large families, one can clearly notice the differences between siblings in terms of acculturation; the younger ones (pre-puberty at arrival) are not only more fluent in English and speak the new language without an accent, but are also more likely to select careers in fields such as law, literature and journalism, which are based more on language than they are on math and science.

As suggested earlier, we have found that the more "Americanized" the refugee youth (and their families generally), the lower tend to be their patterns of attainment, whereas the more resilient in traditional cultural values and attitudes, the higher the attainment. By

"Americanized" in this context we refer specifically to the internal world of the person rather than more superficial external insignia of cultural preferences, and moreover to the meaning that "becoming American" has for the refugees themselves: that is, by "Americanized" they seem to mean being assimilated into what are perceived to be currently dominant values which emphasize self-gratification over self-sacrifice, fun (leisure activities) vs. effort (work ethic), consumption over production norms, individualism vs. collectivism, independence and "selfishness" vs. familial obligations and respect for elders, "permissiveness" vs. "authoritarianism," equality and democracy vs. hierarchy and autocracy (both in gender roles and in parent-child relationships). Therefore, the finding reported above in Chapter 3 -- that educational achievement steadily improves for younger youths and over time in the U.S. -- probably cannot be projected indefinitely into the future. Rather, we predict, based on our qualitative analyses, that this effect will soon plateau and then begin to diminish as the younger family members become more inculcated with such prevailing American values and expectations--a process that will be dysfunctional for educational attainment. The exact transition will depend on the structural ability of families to maintain traditional values and norms (pressures) that lead to higher achievement, net of the social class advantages of parents.

The challenge of learning to cope with the new (and itself changing) American society while retaining elements of the old culture is completed by the maturation process itself. For example, on the one hand, Xuan Tran, a Vietnamese youth who arrived at age 12, struggles with his adolescence, intertwined with a search for ways of balancing his home culture and the host culture. Yet, on the other hand, Van Le, a Vietnamese youth who arrived post-puberty with a largely formed Vietnamese identity and orientation, does not approach the American context as a search for identity but rather he treats his situation as one of finding an occupational niche. In considering problems of adolescence we need to ask about what constitutes the "adolescence" period for the Southeast Asian youth. How do parents and youths define that period of transition? For parents who accept the legitimacy of post-secondary education, adolescence/youth might extend into the twenties, with the postponement of courting and marriage until the completion of college and placement in a career. Quy, Xuan, and the other college-bound Vietnamese students we interviewed certainly see their lives in this manner. Those who believe that family formation should occur prior to or about the time of high school graduation assume that their children will become adults at that point and leave that stage behind. This applies especially to the Hmong, who mark marriage at an early age as the entrance into adulthood, thus short-circuiting what we in this society have come to expect as a "psychosocial moratorium" or period in which youths experiment with and develop their future. All of our Hmong informants either had little or no "adolescent" period as such. Even

Cheng Xiong, the unmarried 25-year-old Hmong university student, has had to act as the effective head of his household since he was 14 years old. These considerations of the beginnings of adulthood and thus the formation of refugee futures are centrally located within the family organization.

Among the consequences of prolonged versus shortened stages of youth for Southeast Asian "1.5ers," as they experience and cope with the "double crisis" of growing up and bridging two cultures, are stresses which are manifested as intergenerational "communication" problems and "emotional" conflicts. Especially but by no means exclusively among Vietnamese youth we found expressions of this: for example, Quy described the years from 15 to 17 as a time of "being alone" without anyone who could be consulted. She seemed happy on the outside, but was unhappy on the inside: "Change in values. I think from childhood... you know, being a teenager, that was the main thing. And I don't think my parents were aware of it. They were so busy trying to keep the family going. Getting jobs... It was a very sensitive stage..." Quy also commented about her regrets over her single-minded pursuit of grades during her high school days, realizing that she would like more communication with parents and a wider knowledge of herself and her world. Quy is now asking herself, "Is there more to life than becoming a physician?" That is but one of the many such questions that all refugee youth, in varying degrees of intensity, will continue to ask themselves in the process of forging some new, essentially bicultural identity. There is no fixed time limit on the acculturative process and its many manifestations, however, and for most refugee youth the acculturative process will probably be a permanent lifetime challenge.

Coping Strategies. At the beginning of this report (see Fig. 1-1), we conceived of the coping/adaptive strategies of refugee youth as consisting of two main dimensions: (1) **definitions of the situation** (including their world view, values, beliefs, goals, motives, aspirations, expectations, evaluations, attitudes, loyalties, satisfactions, perceptions, identifications, etc.); and (2) **role behaviors** (including their attempts to maximize opportunities, minimize obstacles, manage and reduce conflict, solve problems and achieve goals in the adaptive contexts of family, school, community and economy). Given their ethnocultural backgrounds and the institutional nexus in which they are located, what specific approaches are these youths taking regarding their future? How do they conceive of their future? What plans are they making, and how do they intend to fulfill them? What actual steps have they taken toward achieving those ends, and particularly in coping with the problems of education and work? Here we make an effort to spell out these dynamics comparatively.

The multivariate analyses in earlier chapters identified ethnicity as a central predictor of educational and occupational outcomes even when parents' social class was controlled, and throughout much of this report we have made comparisons between the different refugee ethnic groups. In our interviews we have found further clues about ethnocultural differences between groups as well as individual variations within each group, especially as these are revealed in their coping strategies: That is, for all their diversity, as refugee youth go about the process of selecting occupational goals, making plans for schooling and careers, "learning the ropes" of the American settings they try to adapt to, and dealing with Americans and with authorities, **they exhibit approaches to problem-solving which are patterned and predictable.** In what follows we attempt to characterize these patterns parsimoniously for analytical purposes, and to distinguish accordingly among the Vietnamese, the Khmer and the Hmong groups we have studied.

While coping strategies can take many forms, we propose for our purposes here a paradigm of adaptive behavior consisting of four main axes or components, which summarize our sense of how refugee youths essentially approach the problems of finding a place for themselves in American contexts:

- (1) **Self vs. Collective Orientation:** Do they take themselves as individuals or their family or other collective as the major reference point in their adaptive strategies? Will they be principally preoccupied with their personal feelings and well-being over that of their family, clan or other collective, or will it be the reverse? What takes precedence in guiding their goals, plans and actions?
- (2) **Instrumental vs. Expressive Orientation:** Do they approach their adaptive tasks with an instrumental or an expressive focus? That is, are they mainly concerned with achieving specific goals by performing practical, affectively-neutral tasks, or are they more affectively rather than instrumentally concerned with maintaining harmony in social relationships?
- (3) **Active vs. Passive Orientation:** How do they engage others in the process of adaptation and in the pursuit of self-sufficiency? Will they be active or passive, aggressive and competitive or withdrawn and perhaps even wanting to be "invisible"?
- (4) **Short-Term vs. Long-Term Orientation:** Are their plans and problem-solving strategies geared to short-term or long-term solutions? What is the temporal dimension that is reflected in their approaches and calculations? Are they carefully calculating their current

activities on the basis of long-term future goals, or are they almost solely preoccupied with the immediate requirements of the present, to the exclusion of long-term planning?

Although this four-fold categorization of coping strategies is somewhat arbitrary, it is derived empirically from our observations of the main refugee ethnic groups. As an analytical device, it gives us one method for capturing the essence of the extremely complex and varied coping styles and approaches of the three refugee groups: specifically, by locating their adaptive strategies -- that is, their "definitions of the situation" and their "role behaviors" -- along each continuum of action orientations outlined above. Using this paradigm, then, as a means of distilling the mass of our qualitative information into more manageable form and making our analysis more comprehensible, we can summarize the most distinguishable coping strategies of the three groups we have focused on (the Vietnamese, the Khmer, and the Hmong) as follows:

- (1) *Vietnamese* coping strategies reflect what we will call a family-oriented "**collective instrumental competitiveness**" in their approach to action, and show by comparison a greater likelihood of being calculating, ambitious and status-conscious, and a long-term orientation to goal-setting and planning;
- (2) the *Khmer*, by contrast, reflect a more passive, unhurried, unambitious, "step-by-step" coping style which we will call "**individual expressive withdrawal**," a style which is more self- and peer-oriented toward affective, non-competitive, and relatively short-term goals;
- (3) the *Hmong*, in turn, exhibit a pragmatic, shy, cautious style of adjustment that we will term "**clannish instrumental avoidance**," which differs sharply from that of the other two and which reflects the most affective neutrality in interpersonal relationships with "outsiders," who are generally avoided outside of official public settings, and the least long-term planning.

Each of these distinct ethnocultural adaptive styles will be explored in some detail below and illustrated with case materials. The discussion will be limited to how these coping styles are revealed, respectively, in such areas as career selection and planning, "learning the ropes" of the educational and occupational systems, and dealing with Americans and authority. At the conclusion of this analysis, we will add some comparative remarks on the adaptive strategies of

- (4) the *Lao*, which, despite various sociocultural similarities, differ from those of the Khmer in significant respects, and which might be termed "**individual instrumental manipulation**."

To begin with, while one can ask Southeast Asian refugee youths about their educational and occupational **goals**, their answers are not likely to reflect the same level of conceptualization and commitment. Nevertheless, we believe we have been able to identify the central preoccupations which seem to define their goals and directions. The Vietnamese informants were clear about their goals -- typically, they aspire to a college education and a professional degree. Matching the quantitative results reported earlier, they tended to select math- and science-based, higher-status professions, such as medicine, engineering, computer science and business. The Khmer were less clear and selected occupations which were of lesser status and more likely to entail human services-- nursing, clerical assistance, electrical repair, and counseling. Again these observations match the quantitative outcomes.

Commensurate with such occupational goals, be they long-term or short-term, we note differences in their **plans** for accomplishing these goals. Again the Vietnamese seem to have precise, well-developed and well-researched plans for the future, while the Khmer have shorter range and less precise plans. And, notwithstanding the quantitative data reported above on their career aspirations, the Hmong seem to develop plans for the future based less on a clear knowledge of career paths and more on guesswork -- their expressed aspirations while still in high school, therefore, may be less accurate, realistic and predictable. Among Hmong youth, their access to information about the world of work, especially to the wide range of available jobs -- including those requiring post-secondary education -- is meager. Their fathers, generally, had two main occupations in Laos -- soldiering and farming. It is rare for a Hmong student to know someone who has had a primarily urban-based career. The Khmer are also lacking in knowledge of the wide range of career options, especially those based on post-secondary training; in addition to choosing service-oriented jobs, they have more often selected blue-collar and lower status jobs based on their more limited exposure to those occupations and associated activities, e.g., electrician and electrical repair.

Bopha, a young Khmer woman who has selected nursing as a career path, had been encouraged to seek a medical career, but her approach to learning and careers is based on a **"step-by-step"** strategy of selecting "see-able/do-able" tasks not requiring long-term commitments. This strategy exemplifies the general Khmer attitude of moderation -- not being the richest or being the poorest, but someone in-between. She embarked on her college career by taking French, a subject she knew well, and then progressively moved into courses with which she had less familiarity -- "step-by-step." Narong Chhay's selection of "electrical engineering," though it may seem an ambitious goal, was influenced first by his exposure to electrical tinkering through one of his relatives, then by his job as an electronics technician, his

vocational training in electronics at a community college, and finally the advice of college friends who told him of "electrical engineering" as a possible career -- although Narong seems most interested in having an electrical repair shop. Additionally, the Khmer selected careers on the more intrinsic basis of their personal liking of the occupation and the opportunity for helping others, not on the basis of status-seeking or obedience to the dictates of a parent. Narong picked electrical engineering because he loves tinkering with electrical gadgets; perhaps he foresees the high wages of an engineering job, but his main motive is the "fun" of electronics, an affective motive which stresses the activity as an end in itself. There seems to be a Khmer folk theory about the selection of careers as involving a process of finding within oneself an innate "talent" which, when discovered, leads to a natural unfolding of one's life. The focus here is individualistic and voluntaristic, on the self rather than the collective. [It is worth noting here parenthetically that groups such as the Hmong, the Chinese and the Vietnamese, who are based on a culture of ancestor worship that commemorates the deathdays of elders rather than celebrates the birthdays of individuals, are deeply oriented to the family and to collective kinship norms; whereas groups such as the Khmer and the Lao -- and, for that matter, most Americans -- who lack such ideas of ancestor worship, are more oriented to the individual self.] The Khmer also add the rationale of providing "service" to others as a reason for selecting a career. Even Narong sees electronics as a means of helping others by fixing their electrical goods. In fact, all of our Khmer respondents find in service to others a central source of life satisfaction, probably reflecting the Khmer Buddhist concept of doing good deeds and earning merit for future lives.

These criteria of "enjoyment" and "service" typical of the Khmer stand in clear contrast to the Vietnamese notion that one can become anything one seeks and that career selection should not be based merely on "talent" or affective considerations such as a personal liking. Rather, for the Vietnamese, the key motives for a career seem to be primarily instrumental: Does it give high status? Does it provide a good income? Only secondarily do the Vietnamese discuss the joy in work as a motive for career selection. As reflected in many examples in our case histories, Vietnamese youth seem geared primarily toward the formal features of careers and only secondarily toward their technical substance: i.e., earning the degree and the certificates are the prime objective, rather than mastering the substantive knowledge required to become an outstanding practitioner. One Vietnamese informant expressed disappointment on his experiences in the United States because he felt that, after achieving a degree, getting and keeping a job would be all "downhill." To his amazement, he found not only that he could be fired for incompetence but that he was expected to continue to work hard as a condition for continued employment and promotion. In Vietnam as in much of Asia, the primary goal

among those seeking professional careers was the competitive attainment of the social status conferred by a degree -- and jobs were thereupon seen as the deserved material rewards for having achieved a prestigious degree; to this was added the further assumption that, once hired, permanent employment would be insured on the basis of the formal status already achieved rather than on the continuing demonstration of substantive merit. Put differently, "meritocracy" may have driven the competitive system of education, but it seemed to end upon graduation. Such an orientation, as one of our respondents pointed out, still seems to characterize the educational and occupational attitudes and strategies of many Vietnamese refugees. Indeed, "hard work" in high-status or professional jobs (as opposed to studious effort at school) was seen by that youth as more of an American rather than a Vietnamese trait.

The Hmong informants picked careers based largely on their concrete experiences, somewhat like the Khmer. The Hmong seem to have few preconceptions of the job world and are open to relying on experiences as a basis for occupational selection. They rarely aggressively pursue career information from counselors and seem unsophisticated in acquiring information about activities with which they have little experience. In contrast to the Khmer and Vietnamese, they seem to be more purely pragmatic and less concerned over intrinsic interests such as one's personal enjoyment of an occupation or the satisfaction of helping others (the Khmer emphasis), or ulterior interests such as whether a job carries high status (the Vietnamese emphasis); rather, they are most concerned about concrete issues such as whether or not the career is accessible and will bring home enough money to support one's family.

One of our Vietnamese informants not only emphasized status as a criterion for selecting careers, but she also interpreted the search for high status as a matter of **ethnic pride**. Although she was interested in poetry and the language arts, she selected electrical engineering because she wanted to show Americans that the Vietnamese are "somebody." She did not select literature as her major because she felt she could not compete well enough with Americans in an English-based major but would have a much better chance competing in a math-based discipline. This motive to demonstrate Vietnamese pride reflects their **competitive orientation** toward educational achievement and occupational success: the goal is more than just gaining more education, but also a symbolic victory by winning a competition. What is more, underlying their actions and attitudes in their adaptation to U.S. society, it appears that the Vietnamese share a especially intense, ambivalent and unresolved relationship with Americans -- much more so than is the case with the other non-Vietnamese refugees from what was, after all, first and foremost, the "Vietnam" War. The psychology of this relation, which derives from the nature of U.S. entry into and exit from the Vietnam War, reflects

elements of both resentment and entitlement on the part of the Vietnamese, with perhaps a subliminal tendency to place moral obligation and blame on the Americans -- who in turn may harbor toward the Vietnamese refugees residual and mixed sentiments of guilt, responsibility and compassion. All of this may combine to function mutually as a long-term motive that actually facilitates the entry of the Vietnamese into the host society.

To their competitive ethnocentrism must also be added a Vietnamese preoccupation with seeking approval from the host culture, as reflected in these comments from the same respondent: "...because like of all the friends I have known, they have a pressure from their family somehow to... or it's just something that has been taught since they were little... that they have to do well in school, especially after the escape from the old country and then come to this country. We have to show the Americans or the people of this country that we have the ability to do well. And doing well means that you get good grades in school, that you have successful life when you get out. To my feeling, it seems like to the parents of the family, if you get good grades... well, they always have more respect for the educated people, for people who have knowledge for a degree in a scientific field, something so that when you can get out, you can make a lot of money, that you can somehow have power if you have a lot of money. But the idea of competing with the native Americans in fields like literature, like language, linguistic or something like that... that never gets to their thought, because maybe they think that it's too hard for them." In this regard, we find that while Vietnamese ethnocentrism and ethnic pride may serve as a powerful motive force for competitive achievement and self-justification, it may also, especially when it is not adequately controlled, spill over into physical confrontations in the schools (as reflected in the data on school suspensions) and potentially antagonize broad sectors of majority-group Americans -- not only over "model minority" stereotypes, but also over the perceived "ungratefulness" of "refugees" who benefit from the American economy while criticizing American culture. (Such critics, in turn, often ignore or forget the contributions of refugees to both the American economy and culture.)

Vietnamese youth determine the meaning of their efforts through comparisons with others. Ever year the local Vietnamese PTA gives educational awards to the highest performing students, with the size of the prize being commensurate with the level of achievement. In this way competition is reinforced as a way of assessing the worth of individuals. Their level of expectations is much higher than that of the Khmer or the Hmong, and therefore they are not easily satisfied with B grades or with any measure that signifies something less than "number one." We noted earlier that during the recent annual awards ceremony in San Diego, one of the mothers who drove her daughter 100 miles roundtrip every Saturday to a Vietnamese language

school was given a special award for supporting her daughter. There is no doubt in these actions how seriously the Vietnamese treat educational efforts. This competitive attitude under the guise of the awards ceremony is a demonstration not only of the importance of studious effort and doing well, but also a collective celebration of ethnic pride and achievement (cf. Simon, 1983; Velasco et al., 1983).

By contrast the Khmer are typically non-aggressive and non-competitive, as are the Lao, seeking gratification as an extension of one's natural inclinations -- in a more relaxed, unhurried and leisurely way. We suggested earlier that this may reflect a Buddhist-Karmic religious world view, as well as parental values and possibly overprotective childrearing practices which encourage longer dependency on the mother and which lower the standards and pressures for achievement by the child; indeed, as noted above, such characteristics are evident in their children's classroom behavior by the earliest school grades, as observed by first and second grade teachers in California elementary schools whom we interviewed. [On the causal role of various childrearing practices in producing a high motivation to achieve, or "*n Achievement*," see McClelland, 1961.] The main concern of these groups is with personal happiness and fulfillment, which -- for the Khmer much more so than the Lao -- often involves doing good deeds and accumulating merit by helping others. The Khmer come across as much more expressive and "other-directed" than do the Hmong and even the urbane Vietnamese. The search for educational success among the Khmer is largely a preoccupation of the educated Cambodian elites who were influenced by the French urban middle class, especially those associated with government civil service offices (Steinberg, 1959:272). The Khmer approach to achievement -- in moderation and at a slow pace -- is typically less ambitious. The Khmer theory of achievement is based not so much on the idea of individual effort, hard work and "moral character," but rather on the notion that innate talent will bloom on its own and that one needs only to be alerted to its presence. Combined with the pervasiveness of psychological depression and trauma among this population, a common observable tendency among the Khmer is to withdraw and to seek solutions which will not "stand out."

The Hmong seem not at all preoccupied with publically demonstrating their achievements and seem much more inwardly oriented and stoic in manner, "clannishly" concerned with ensuring their security within the family and clan and favoring being left alone by outsiders. Scott (1986:178-80), in an unpublished thesis based on several years of ethnographic field work among the Hmong of San Diego, observed that Hmong students in public schools appear to be polite, thoughtful in their expression of gratitude to teachers, shy, lacking in self-confidence, and not assertive in class. This, he continued, put them at a competitive

disadvantage with the Vietnamese, who were seen in turn as arrogant, manipulative and pushy complainers: "The endearing qualities of the Hmong students, on the other hand, were seen not only as putting them at a disadvantage now in school but as possibly inhibiting their future success in education and employment as well." Given the Hmong community's reliance on shame as a major social control device, the Hmong student is particularly sensitive to how their behaviors may reflect on their respective families, clans and even on the Hmong community. Their solution is to avoid being either terrible students or outstanding ones, but instead to be substantively good enough to pass muster. There appears to be some competition within the community, especially as school achievement may reflect on clan status, but there is little sign of competition with outsiders. In effect, given their clannish orientation, they do not consider outsiders all that relevant for making comparisons to determine what is meaningful to them. In general, then, the Hmong exhibit short-range goals and little long-term planning in their adaptive strategies; they are pragmatic and instrumental but not competitive or manipulative, seeking no favors from outsiders but rather control and concreteness within the private spheres of their family and clan; they are safety-oriented, closed and clannish in organization, and tend to avoid interpersonal entanglements, especially with outsiders, as reflected in their cautious and affectively neutral style in encounters with Americans.

Turning to another coping arena, how do Southeast Asian youths "learn the ropes" in the process of educational and occupational adaptation in American settings? What strategies do they use in learning how things are done? Two of our respondents, Quy and Xuan, are examples of how sophisticated the Vietnamese are in "learning the ropes." Through family members who have preceded them, through an extensive network of friends, through utilization of school services such as counseling, and through their ability to establish friendly and useful relations with Americans, Quy and Xuan are able to "size" up situations and find solutions which will enable them to achieve their objectives. At the university, Xuan has worked with other Vietnamese students cooperatively to facilitate their workload and to learn enough from each other to get better grades. Note that he had no brothers or sisters close to his own age at home, unlike Quy. His approach is collective, goal-directed and competitive. This contrasts with the Hmong who are very clannish, not willing to volunteer information about themselves, and who seem only willing to seek advice from Americans in specific and well-defined official situations. Rarely if ever do Hmong students ask for help outside of their class activities. Their plans for the their future are vague simply because they do not know many people who can tell them about future possibilities with any measure of concreteness. Their ability to gain access to information is limited since they are not motivated to seek advice and assistance from any non-Hmong.

The Khmer, by contrast, do develop affective relations with Americans, probably more so than the other refugee groups, although this varies widely (see Ima et al., 1983). They generally seem to be preoccupied with expressive matters -- including festivals, weddings, celebrations, reunions and rituals -- rather than with achieving pragmatic goals. This may reflect not only deeply embedded cultural values but also in part the present prevalence of affective disorders among the Khmer: one study by Kinzie et al. (1986) estimated that about 50% of Khmer students at one Oregon high school were depressed, and suggested that they may be more likely to focus on expressive concerns over instrumental ones. Perhaps this is one added reason why the attention of Khmer refugees in San Diego is so focused on the two Buddhist temples and on the "community," since those institutions provide a vehicle for emotional catharsis and moral support. In "learning the ropes," moreover, we observed many examples of individual problem-solving among the Khmer, in contrast to the Vietnamese approach of relying on the collective of parents and siblings for information, advice and support. And finally, many Khmer simply withdraw from problem situations, recalling a Taoist saying that of thirty-six solutions to a problem, the best one is to walk away. The high rate of Khmer school dropouts is probably a measure of this Khmer withdrawal strategy in dealing with problems -- a culturally patterned coping strategy that is only reinforced by the prevalence of psychological depression and post-traumatic stress disorders among this population. (See also Boehnlein et al., 1985; Rumbaut, 1985a, 1988; Williams and Westermeyer, 1983; Carlin, 1979; Ostwald and Bitner, 1968.)

Another issue that reflects the different coping strategies of refugee youth has to do with the way in which they deal with **authorities** who may control their fate. In this area, the Vietnamese have developed strategies which match the cultural requirements of a competitive American society, especially in the contexts of school and work -- an instrumental, self-confident, competition-oriented, status-driven, even manipulative approach. Teachers we have interviewed comment about "being manipulated" by Vietnamese and Chinese-Vietnamese students to give them special considerations. Without a doubt, according to our field informants, the Vietnamese and the Chinese-Vietnamese are seen as the most "aggressive" of these refugee groups. For example, in approaching teachers for better grades, such as in seeking an A grade instead of an A-, a manipulative strategy involves looking for any exceptions or loopholes in the teacher's grading system or, not finding any, attempting to "emotionally blackmail" the teacher by pouting or refusing to talk the teacher for several days. This strategy requires a blend of an aggressive and an obsequious manner and, while it might give the appearance of being two-faced, involves adopting a complex repertoire of roles and

knowing how to manage them. By contrast, the Khmer adopt a more expressive strategy by cultivating the feelings of the authority figure without giving a hint of manipulation. The result of this type of approach is usually a good feeling of on the part of authority figures and a sense that they have "engaged" a real human being rather than a shadowy, calculating, inexpressive one. Thus, along these lines, an American-born secretary of a social service program commented about how she "likes" the Khmer worker because she can "relate" to him, but has difficulty relating to the Hmong worker.

The Hmong approach to authority figures is formal but with a narrowly defined focus on role expectations. If the authority figure is a teacher, the Hmong student will ask questions of the teachers but without a hint of cultivating expressive relations or obligations which go beyond the narrowly defined role definitions. Hmong youth are instrumental in their coping styles yet without the manipulation found among the Vietnamese, the Chinese and the Lao. Cheng Xiong's relationship with his professor at the university is a good example of this: he saw the professor on a regular basis because he was having trouble understanding the abstract, theoretical content of the course, and throughout all meetings they focused solely on that content without any reference to personal matters. We have seen that this distancing from and avoidance of non-Hmong seems pervasive among Hmong youth. As Scott C. serves (1986:496), "It is this extreme disparity in basic values and patterns of social behavior that helps to explain not only the Hmong's lack of progress in economic adjustment, but largely accounts as well for their withdrawal and entrenchment into their traditional culture and ethnicity."

The development of repertoires of multiple roles and the attendant coping ability of many Vietnamese respondents to handle multiple worlds point to the sophistication and hence the flexibility of the adaptive strategies of these individuals. One first-wave Vietnamese respondent in her late twenties, in discussing her potentially contradictory appearance as an "Americanized" Vietnamese on the outside but one who felt "really Vietnamese" on the inside, reveals her use of bicultural role- and audience-segregation skills which seem common especially among upper class refugees. She sees herself as being two separate persons: in the professional public world she is "Americanized" -- as reflected in such behaviors as being frank, speaking her mind, arguing when she thinks she is right, challenging rigid age-deference norms, and the like; but in her private life she is "very Vietnamese" -- in this setting, she says, she manifests none of the behaviors she had listed above as "American." She is inclined to prefer American values, but since she wants to be Vietnamese, she is willing to compromise that inclination for the sake of solidary relations with family members. Quy, the

Vietnamese college student, mentioned that in her years of attending high school in Texas none of her non-Vietnamese friends ever visited her at home, a practice which, in part, facilitated her maintaining her biculturality by keeping separate the two worlds. When we observed her, she was very quiet and obsequious in the presence of her father, but outside of his presence she was talkative and outgoing. In such ways, Vietnamese refugees, especially the 1.5ers, develop behavioral repertoires that allow them to navigate effectively in American settings while preserving their traditional lifestyles and identities within Vietnamese settings. For them, "Americanization" need not be a zero-sum game or an either/or proposition; rather, it becomes an additional set of role behaviors to be summed to an evolving repertoire of bicultural strategies, which are then selectively mobilized in appropriate settings.

The Hmong, by contrast, tend not to reflect a similarly flexible development of bicultural strategies. This is especially true of Deng Vue who, though he arrived in the U.S. at a younger (pre-puberty) age, remains essentially a traditional Hmong without the sorts of interpersonal skills, such as expressiveness rather than his inexpressive flatness, which one comes to expect of a Southeast Asian refugee who has acquired skills in American interpersonal settings and relations. In this regard, it is worth noting here that Deng was also the only Hmong in our case histories who has remained throughout under the authoritarian domination of his father -- a fact that tends to stifle the development of high achievement-oriented standards and flexible, self-reliant coping behaviors in the son (cf. McClelland, 1961). By contrast, as a result of the accidents of war, death and resettlement which have variously separated them from their fathers, Cheng (whose father died when he was a boy) and Moua (whose father moved to Fresno), and for that matter Blia (whose father also died) and even Boua (who lived in a separate household from her father after her mother's death and father's remarriage), managed to avoid or resist father dominance; and that fact has evidently freed them to develop more bicultural strategies of response to the new American context. Indeed, we have observed among Hmong refugees generally a greater likelihood of bicultural, achievement-oriented and self-reliant adaptive strategies in those cases where Hmong sons in particular were not dominated by their father or ranking male in the family. Most young Hmong men who are leaders in their community are, we have found, free of such domination: their fathers are either dead or absent. It is probably not mere coincidence that Hmong legends are apparently filled with stories of male orphans who became great leaders.

We hypothesized at the outset that those refugee youths who are most likely to be self-sufficient (certainly outside of an ethnic enclave) may be those who have developed such bicultural coping skills (cf. Berry, 1980; Szapocznik and Kurtines, 1980; L. Rumbaut, 1986).

Our observations now lead us to conclude that the "*bicultural*" respondents are indeed among the most successful in their adaptation process, whereas less successful cases have remained more "*monocultural*" in their adaptation to date. Other less successful examples of "*monocultural*" adaptations include those of Lao youths we have observed, except that in their case they reflect a tendency to "Americanize" altogether while shedding their traditional cultural identity. Thus, "*monocultural*" strategies may range from rigid adherence to traditional ways to a complete rejection of traditional ways and an imitative conversion to the perceived ways of the new culture; neither of these strategies is as creative or as effective (or for that matter as challenging and difficult to sustain) as the *bicultural* approach to bridging both worlds.

Throughout this section we have necessarily limited our analysis to the three groups which formed the focus of our ethnographic field work: the Vietnamese, the Khmer, and the Hmong. Although the lowland Lao fell outside the scope of the **qualitative** portion of our study as originally proposed -- for reasons having solely to do with limitations of time and resources -- we nevertheless were able to develop along the way fairly extensive field notes on the Lao, based on occasional interviews with Lao youth, school counselors and community informants. On this basis -- and given the important conclusion, drawn from our **quantitative** findings on both educational attainment as well as juvenile deviance, identifying the Lao as perhaps the most problematic and "at-risk" of the Southeast Asian refugee groups in terms of their prospects for self-sufficiency -- we can tentatively offer the following additional observations concerning the adaptive strategies of Lao youth, as compared to those of the other groups.

Earlier we noted that the Lao differ sharply from the "VCH" (the Vietnamese, the Chinese and the Hmong) on fundamental aspects of family social organization and cultural values, while sharing many sociocultural characteristics with the Khmer (hence we referred to the "LK"). However, it would be misleading to conclude from this general distinction that the Lao and the Khmer therefore also share common coping strategies. After all, while the above-reported data and regression results on GPAs, achievement test scores and occupational aspirations show the Khmer to be performing at only a slightly better level than the Lao, we also found very significant differences between the Lao and the Khmer with respect to school suspensions, juvenile delinquency, and dropout rates -- differences which obviously cannot be accounted for in terms of the apparent pre-migration class and cultural similarities characterizing these two LK groups. Nor can these differences (except possibly the significantly higher Khmer dropout rates) be explained in terms of the one immediately obvious post-migration contextual difference between them: namely, the uniquely traumatic psychosocial impact of the Pol Pot period on Cambodian refugee families and individuals, a

fate fortunately escaped by the Lao. What other factors, then, can account for the observed differences in juvenile deviance outcomes between the Lao and the Khmer?

Our field research suggests that **there are important sociocultural differences between the Lao and the Khmer in their coping strategies and approaches to problem-solving.** Where the Khmer exhibit a strong orientation to "the community," to the Buddhist temple and generally to service toward others -- and where the Vietnamese exhibit a strong collective orientation to the family and the Hmong to both family and clan -- the Lao appear by comparison to be more individualistic and self-oriented. Where the Khmer reflect an expressive orientation to action and to social relationships, the Lao are comparatively much more instrumental, according to all of our field informants -- except that, unlike the more active, competitive and direct manipulative strategy exhibited by the Chinese and Vietnamese, the Lao approach involves a more passive, non-competitive and indirect manipulative strategy, oriented more to "getting away with things" than to "getting things." This point is also underscored, as mentioned above, by the analysis of Lao "patron-client" relationships reported in the research literature (cf. Van Esterick, 1985; Keyes, 1977; Halpern, 1964; LeBar et al., 1960). Accordingly, where the Khmer seem to form affective bonds or attachments in their relations with Americans, Lao relationships seem based on much more contingent, and ephemeral commitments and notions of "loyalty" -- a point made often by American employers of Lao refugees in San Diego (see also Rumbaut, 1988). Furthermore, while both the Khmer and the Lao reflect a greater emphasis on recreational values than do the VCH, the Lao (especially the majority who do not come from the urban educated elite) reportedly seem to be relatively less interested in "hard work" and more likely to seek short-range solutions in their survival strategies. These observations, however, should be placed in the context of the fact we reported earlier: namely, that *within* the Lao refugee population there are noticeable background differences in social class, ethnicity and regions of origin, and that this diversity of origins is reflected in a diversity of adaptive strategies and outcomes. Still, the reported attitude of the Lao toward work is generally similar to that reported by anthropologists who have studied the Thai, a group more closely related to the Lao than to the Khmer (Evers, 1969).

For example, in a well-known study (and one that is supported by our own ethnographic observations and analyses of the various Indochinese refugee groups), Embree (1950:190) noted the following distinctions: "In Japan, as in puritan New England, work is regarded as a virtue, and an easy life of self-indulgence is considered wrong... The Vietnamese are a hard-working people and put a considerable premium on this trait. For the poor, physical labor is a necessity, but with the wealthy, white-collar tasks in government or as scholars are prestige-

giving -- and a Vietnamese is willing to work long and hard and deny himself many pleasures in order to achieve a name in the administrative or scholarly world. This is not the point of view of the Thai. Work is not regarded as good in itself. There is, on the contrary, a good deal of attention paid to things which give enjoyment. Pleasure is often considered a good thing *per se*." Embree also cited the following passage from Landon's (1939:143) work on the Thai concept of "snuk" -- which, according to Lao cultural informants, is similarly used by the Lao as well: "A word that indicates an important part of the Siamese character is the word 'snuk.' In its simplest aspects it means 'fun-loving' or 'pleasure-giving.' The Siamese are a pleasure-loving people, as is shown by their ready laughter. The people they like are those who can make them laugh and feel happy... To travel is definitely 'snuk.' The idea of 'snuk' even carries into religion. A group of Siamese attended a Christian Church service for the first time. They remarked, after leaving the church, that the service was not 'snuk' and that they would not come again. When they were asked if Buddhism was 'snuk,' they said that it was. Their religion not only provided a method of worship, but also a system for satisfying the social needs of the group. The temple is the focal point of the community, the centre around which revolve the religious rites, the picnics, the plays, and the other amusements of the people. The religious year has days for boat racing, sports, games, trips to holy places, shadow shows, and festive parades. So even religion becomes 'snuk.' " Indeed, noting that these traits are shared by peoples of neighboring cultures such as the Lao, Embree was "struck by the almost determined lack of regularity, discipline and regimentation in Thai life... in contrast to Americans, the Thai lack respect for administrative regularity and have no industrial time sense... There is none of the stiff formality in the Thai classroom comparable to that in Japan. The teacher may speak quite informally and the pupils are under no compulsion to sit at attention... In the family, the father is the putative head, and children are supposed to obey their parents. But in practice, there is none of the strong sense of duty and obligation to parents which is so characteristic, in diverse ways, of Vietnam, China, and Japan. Even the family precepts in this regard are milder, since the Thai [as do the Lao and Khmer] follow the Buddhist rather than the Confucian rules" (1950:182-83, 189).

Although Lao parents do not have the least education among all the refugees, Lao children have notably lower GPAs than the other refugee groups. Their aspirations are modest, and, as noted by teachers and counselors, Lao students are strongly peer-oriented and reflect a greater preoccupation with "having fun" rather than succeeding in school. One Lao professional suggested that the Lao -- unlike the Khmer -- are additionally preoccupied with "cleverness" and with getting away with deviations from established rules without getting caught. Life is seen as a game of the clever -- again paralleling the related analysis of the Thai suggested by

Embree (1950:186-87): "To tell a lie successfully, to dupe someone else, is praiseworthy in Thai culture... It is not so praiseworthy to have one's lie discovered, however, and one so discovered invites any punishment he may receive. There are many sayings bearing on this point, and many of the popular stories...reflect an admiration for the man or woman who can successfully deceive another. It is shameful to be caught, but clever to succeed." The higher levels of Lao juvenile deviance reported earlier (relative to other Southeast Asian groups) seem to be linked in part not only to looser parental social controls and childrearing practices but also to the "snuk" behavior reportedly exemplified by some Lao adults, including a relative preoccupation with recreational values and concerns. Taken together, these reported differences between the Lao and the Khmer may help explain the significantly greater proportions of Lao youths who are suspended from school and processed through the juvenile justice system, relative to Khmer youths.

On the other hand, these observations should be kept in perspective: compared to all students in San Diego schools, Lao youths have lower than average school dropout rates, higher than average scores in CTBS math achievement tests, extensive peer group networks which can function to provide both emotional and instrumental support during their school years, and an open, accommodative and even imitative stance toward adopting American lifestyles within American environments. As one Lao leader who has seen many Lao communities across the country suggested: "The Lao are like chameleons, and they tend to reflect their social environment. If the people around them value education, they tend to emulate that. If they don't like education, they will seek to be like that." While there is cause for concern in some of the quantitative and qualitative data we have collected on the Lao as a whole, *there is also evidence that a substantial minority of Lao youth are doing very well at the high school level* (see especially Tables 3-1 and 3-2 in Chapter 3), and that this subgroup in turn is managing the transition into post-secondary schooling -- a transition that is comparatively more problematic for the Hmong as a whole. In any event, the unique pattern of outcomes, problems and needs in the Lao refugee community which we have preliminarily identified here certainly deserve more systematic follow-up research (see Luangpraseut, 1987).

One last comment may be added here before concluding this effort at comparative qualitative analysis. We remarked earlier that "Americanization" processes, as depicted above, may actually be dysfunctional for GPAs and related achievement measures of refugee youth attainment -- all the more so in a structural context where the first generation of refugee parents lack the wherewithal to be able to "bail out" their children, economically or otherwise, should they "crash" at any point in the rocky passage from early adolescence to productive social

roles. On the other hand, the "rising expectations" of Indochinese youth within a dynamic and rapidly changing American society will most likely not be fulfilled in the static context of the traditional values of their ethnic communities. Indeed, in any analysis such as this one, we need to recognize not only the familiar inter-generational and intra-generational conflicts between Southeast Asian and American ways of life with which the refugees must cope, but also the accelerating pace of sociocultural change within the United States itself as well as the existing contradictions and inconsistencies within American culture and social structure -- for example, the co-existence of competing ideologies and institutions of equality and of racism, of community and of individualism, of affirmative action and of meritocracy, of equality of results vs. equality of opportunity, of welfare state entitlements and of laissez faire entrepreneurship, of fundamental civil rights and of competitive social Darwinism. After all, the United States has been justly called a "permanently unfinished" society, and "Americanization" is a process full of irony and paradox which is far from being either finished or clearly grasped by Americans themselves, to say nothing of recent Indochinese refugees whose sociocultural origins are an ocean and a civilization away. If coping with American society is problematic to the native-born, it is often perplexing to the foreign-born -- and all the more bewildering to these varyingly uprooted, unprepared and reluctant refugees. The resolution of such acculturative conflicts among these refugee communities -- especially as these are confronted within the central institution of the family -- will certainly affect the educational, occupational and economic futures of the coming generation of newcomers from Southeast Asia.

Chapter 7.

CONCLUSIONS.

We have argued in this report that refugee youth self-sufficiency "outcomes" -- such as their educational achievement, occupational aspirations, and social adjustment -- are shaped by a complex interplay of adaptive "resources," "contexts" and "strategies." We have examined in particular the effects of their parents' social class backgrounds, cultural values, family structure, childrearing practices, school contexts, community organizations, and acculturation and coping processes. In addition, variables such as age, gender, time of arrival, and various situational factors enter in as important determinants of adaptive "success." While the Vietnamese, Hmong, Khmer and Lao refugee communities we have studied exhibit great diversity in all of these factors, nonetheless we have shown that their paths to socioeconomic attainment are patterned and predictable in specifiable ways. Some factors are more predictive than others, and our quantitative and qualitative analyses have attempted both to identify them and to understand the causal dynamics that lead to various adaptive outcomes. All of this, in turn, provides a base of knowledge upon which better informed evaluations can be made concerning the prospects of this coming generation of Southeast Asians for future economic self-sufficiency in the United States -- a fundamental policy concern as the refugee resettlement program enters its second decade since the end of the Indochina War. Indeed, the information gathered in this report specifically attempts to identify the most salient problem areas and at-risk groups, and as such it contains many implications for public policy, programmatic intervention and further research, although it has not been our purpose here to suggest any specific recommendations in that regard. In concluding this report, then, rather than attempting to summarize all of the major findings, we offer the following general assessment:

We are above all impressed with the strength and ingenuity of these young refugees from Southeast Asia who, despite their many handicaps and in a remarkably short period of time, have been able to make exceptional progress in American schools and establish themselves as potentially productive contributors to their adoptive society. For the most part, in assessing the prospects for economic self-sufficiency even of those whose parents remain dependent on public assistance, we would ask the question "when" not "if" they will leave the welfare system. We have every evidence to expect that the future occupational and economic situation of this coming "1.5" generation of Southeast Asians will be much improved over that of their parents, and indeed that they will be able to contribute much to their parents and families as

well as to the communities where they are rebuilding their lives. This is particularly significant in view of the youthfulness of the Southeast Asian population in the United States -- approximately half are under 18 years of age -- which suggests that the near-term future of these refugee communities will be increasingly dependent on the role of youth, and on the nature of their educational and occupational adaptation.

Our optimistic assessment of their progress and prospects is based on the full range of our observations. Key indicators supporting this assessment include the following: (1) their high school grade point averages and standardized math achievement test scores are much higher on average than the norms for American students; (2) their English proficiency test scores are understandably very low at first, but steadily improve over time; (3) the grade point averages and standardized test scores of younger refugee students are increasing faster than those of their older siblings; (4) their occupational aspirations are generally ambitious, and exceptionally so for the Vietnamese and Chinese-Vietnamese; (5) the optimistic observations of teachers and other authorities who deal with refugee students; (6) their comparatively low rates of juvenile deviance, as reflected in such indices of social adjustment as school suspensions, dropouts, and juvenile delinquency; (7) the disproportionate numbers of high school honor students among the refugees, especially those from Vietnam; (8) the overall high enrollment of refugees in post-secondary schools; (9) the collective strength of their family and community organizations; and (10) the generally upbeat tone of our interviews with Southeast Asian youths [as documented in detail in the twelve case histories sketched in a separate volume].

This assessment, while optimistic, is nevertheless not so naive as to overlook the difficulties these young refugees have faced so far and the long uphill struggle they still face into the future. Some remain at-risk. For example, on the basis of all of our indices of adjustment, it appears that most at-risk may be a significant proportion of Lao youth; the Hmong are having difficulties making a successful transition into post-secondary schooling; the Khmer are most at-risk for dropping out of school; and some Vietnamese youth, often those without parents or effective family controls, are at-risk for juvenile delinquency. Among the problems and barriers these youths must face are the need to learn a totally different language and culture, to "make it" despite the handicaps of poverty, prejudice and racial discrimination, to overcome the psychological impact of the loss, separation and trauma of the life events they have experienced, and to forge a bicultural identity in a new society, often at the cost of considerable intergenerational conflict within their families and ethnic communities. The wide variations in social adjustment and academic attainment are not in themselves surprising; like with any sample of humanity, variety is to be expected. Beyond just noticing

the successes and failures in adjustment among the different refugee groups, however, our observations have suggested specific pockets of risk -- and clues about what could be done to increase the likelihood of success and to reduce the barriers -- which may provide policy makers with possible directions for planning and programmatic intervention. Very briefly, the following summaries highlight some of the more salient strengths and weaknesses we have observed among these groups, and some implications for their economic prospects.

The Vietnamese:

Among all the Indochinese groups, the Vietnamese are the best positioned to succeed and become self-sufficient. Since they are disproportionately entering the post-secondary educational system, they are the most likely to enter the primary labor market in professional and technical fields. They are also -- especially the ethnic Chinese-Vietnamese -- the most entrepreneurial of all the refugee groups, and the most likely to put together the needed labor and start-up capital to start small businesses and to use self-employment as a means towards self-sufficiency. Although they continue to rely on welfare assistance whenever they are eligible, they pool that resource frugally as part of an overall collective strategy to eventually purchase homes, ensure the college education of their children, and establish financial independence. In short, we expect the Vietnamese to use welfare strategically, but they are achievement-oriented and will be the most likely and the soonest to exit from any dependency on transfer income.

On all academic measures, the Vietnamese and Chinese-Vietnamese are among the top students in area high schools. In San Diego, we found that almost one in four of the Valedictorians and Salutatorians among graduating students were Vietnamese -- even though the Vietnamese constituted only about 7% of the graduating seniors in those high schools. They have very high GPAs, solid math achievement scores (ranking in the top quintile nationally), improving language proficiency scores, a high rate of admissions to colleges and universities, and high visibility at the graduate and professional school level. Underlying that success is their families' continuing belief in and support of education as a vehicle for upward mobility, their sophistication in dealing with educational institutions and, most impressively, their ability to develop collective strategies of resource-pooling and general support networks based on tightly-knit extended family organizations.

Among their main problem areas we have identified the following. First, not all Vietnamese youth have come with intact or functional families. In these cases the youths are less likely to move quickly toward self-sufficiency; instead, as many have noted, they may become high-risk youth who not only get into trouble with school and police officials, but also are among those who drop out of school. Many are found in "gangs" whose sustenance appears to be based on illegal activities. Secondly, even those Vietnamese who continue into post-secondary education do so with English language deficiencies which are inadequately addressed by both school officials and the students themselves. In their zeal to compete successfully for grades and awards, Vietnamese students often focus on math- and science-based courses (where they are least handicapped by language deficiencies) at the expense of English-based courses and a more well-rounded curriculum. Even though many will receive advanced education, given their single-mindedness in acquiring a technical degree in computer science, engineering or allied areas, their continuing deficiency in English may set a limit to their opportunities and to their value to employers. This tunnel vision which places form over substance may even limit entrance into jobs which are otherwise commensurate with their technical competence. On the other hand, this specialization in math-based fields may apply mainly to those youths who came at or after the age of puberty, whereas those who came at a younger age (pre-puberty) or who are born in the U.S. learn English quickly and without an accent, and appear to be diversifying their interests in school. If so, this should also diversify and augur well for their future opportunities.

The Khmer:

It is more difficult to estimate the future prospects of Khmer youths, but compared to the Vietnamese they are clearly less likely to enter the primary labor market, and more likely to enter lower-status white-collar and blue-collar occupations. As with all refugee groups, the demand for Khmer bilingual intermediaries will be a fairly significant source of employment into the paraprofessional ranks -- e.g., as translators, counselors, case workers, teacher aides, and community service police officers -- but they will not likely break through into the professional ranks for at least one more generation. The large majority of those who enter self-employment will be Chinese-Khmer; non-Chinese Khmer will be unlikely to do so. The Khmer are also much less likely than the Vietnamese to pool income within extended family structures, but, especially after the initial years of transition, more apt to form separate nuclear-family households with separate budgets. This leaves the welfare alternative for a large

percentage of the elder Khmer. The continuing adjustment to the emotional scars of the Pol Pot period does now and will genuinely continue to affect a large percentage of Khmer, whose long-term depressive and post-traumatic stress symptomatology seems very much in evidence within the Cambodian community and in need of effective mental health interventions. The diagnosis of what constitutes a permanent disability in order to establish eligibility for SSI payments, however, is problematic and may lead to unintended complications. It is felt by some in the community that given the availability of the SSI classification, a potentially significant number of older Khmer whose actual disability state is less than permanent may come to rely on that form of public assistance. This is largely not a problem affecting the younger Khmer, who will most likely find employment though nearer the lower end of the occupational system.

Despite the prevalence of emotional trauma in their community, their relatively low levels of pre-migration education, and their difficulties with English (all the more visible among the Khmer because they are the most recently arrived group), Khmer students in San Diego high schools have a better GPA than the average American-born student. They exhibit an expressiveness and a likable style of affective engagement with Americans that surpasses that of other Southeast Asian students. This expressiveness is also positively associated with their ability to benefit from counseling and therapy. Notwithstanding their generally poor language performance to date, their optimism and even enthusiasm is infectious. They are less ethnocentric than the other groups, more open to American culture and more reluctant to reject it. In contrast to the Khmer, even the Vietnamese who are proficient in English and familiar with American ways remain strongly nationalistic and ethnocentric, tending to view themselves as somewhat superior and using their bicultural skills effectively in public spheres while remaining committed to traditional cultural values and ethnic identity. There is some question about the significance of the Khmer's openness to acculturation, since our study reveals that ethnic resilience is likely to be associated with academic success, while "Americanization" is likely to undermine it. Nevertheless, this openness will likely be received well by Americans and will assist them in their adjustment and incorporation in American society.

The extraordinary degree of family disorganization (as reflected in a very high proportion of widowed, mother-child households) and the emotional disturbance resulting from the Pol Pot period will continue to depress individuals in this group and to affect negatively their ability to achieve self-sufficiency quickly. Combined with this are culturally patterned coping strategies that reflect the Karmic and Buddhist world view of the Khmer -- as expressed in their "gentle," relatively passive, unhurried, unambitious, non-aggressive and non-competitive ways

-- and their tendencies to seek affective solutions to problems and to withdraw from instrumental strategies which may be more likely to lead to economic self-sufficiency in a competitive market society. These withdrawal tendencies are reflected in the generally lowered occupational aspirations of Khmer high school students, and in their high school dropout rates, which are not only above school district norms but significantly higher than for any of the other Southeast Asian groups. In both of these problem areas -- mental health needs and high school dropouts -- effective programmatic interventions, focused not solely on Khmer youths themselves but on their parents and on the wider refugee community, may hold the promise of greatest long-term positive results for this population.

The Hmong:

When we began this study we had expected little of the Hmong, given the predominantly rural, preliterate backgrounds of most Hmong parents -- characterized by little or no formal education and few transferable occupational skills -- and the fact that Hmong families had by far the highest rates of poverty (around 90%) of any group in San Diego. But we were very pleasantly surprised by the outstanding overall profile of Hmong students in San Diego city schools. Even though on average they had been in the U.S. for just over five years at the time of our study, we found that Hmong high school students had earned higher GPAs than almost all native-born American students, including majority white students and all ethnic minorities except some Asian-Americans. In addition to their high GPAs, the Hmong exhibited very good school attendance, the lowest rate of school dropouts in the city, solid math achievement test scores (putting them near the top quartile nationally), very low indicators of juvenile deviance (hardly any Hmong are suspended from school or arrested for juvenile delinquency)-- in short, a general profile of youths without apparent troubles. We traced this profile to the strong social controls of Hmong parents and extended families and the continuity of family and clan as effective social organizations. That continuity of vertical social organizations seems to generate great discipline and surprisingly high educational performance through the secondary school level. That there is talent and potential in this community is very clear from our data.

The same source of strength is also a source of Hmong weakness in adapting to the United States setting. The insistence on strong social controls in the context of a patriarchal, patrilineal, and patrilocal kinship system in which girls are subordinated and devalued, in conjunction with very large families and a continuing desire to produce many children despite

their generally dismal economic situation at present, explains in large part what one of our respondents perceptively called "a tragic waste of talent." Not only does early marriage and childbearing affect their economic self-sufficiency prospects, but the insistence on patrilineality and the associated devaluing of female children further undermines an educational investment in their daughters, who are not only seen as "lost to the other side" upon marriage in any case, but who also lose their AFDC eligibility when they reach 18,[†] thus adding to the economic burden on already very poor households. All of this in turn frustrates the possibility even for talented and motivated Hmong girls of going to college and fulfilling their high occupational aspirations, and at the same time it increases the likelihood of early marriage and childbearing -- in fact, it may actually push emotionally starved and discontented Hmong girls to seek an early marriage as a "solution" to their household situation. As a result, a vicious cycle of dependency is set in motion, exacerbated by the poverty and very disadvantaged labor market position of the first generation of Hmong refugees; it will be reversed probably only to the extent that young Hmong women can begin to enter the labor force in large numbers, thereby decreasing fertility and increasing Hmong per capita income, which can then be used to invest in educational and other economic opportunities for their families. Although we were struck by the Hmong students' ability to do well in high school and by the organizational capacities of Hmong families, we overlooked the continuing effects of the Hmong's short-term, pre-modern orientations to problem-solving, which weaken their ability to collectively pool resources and channel them towards education and other economic investments.

Thus, although their secondary school performance suggests high achievement -- and even higher potential -- the Hmong seem the least likely at this point to be able to realistically pursue and complete post-secondary education, and hence they are less likely to enter the primary labor market than the other groups. In contrast to the Vietnamese, they lack role models, information networks, and the financial wherewithal to make the possibility of a college education a more realistic option for their youth -- areas where programmatic interventions could perhaps make the most difference in influencing the trajectory of Hmong youth toward more self-sufficient futures. Some of the Hmong youths will find paraprofessional employment in public sector jobs requiring bilingual/bicultural skills, but many more will enter the secondary labor market, and few will become self-employed. The combination of traditional early marriage and high fertility patterns with minimum-wage jobs in the secondary

[†] California AFDC eligibility rules permit an 18-year-old full-time student who will not turn 19 before graduating from high school to continue receiving AFDC payments for a few months until high school graduation. In addition, a girl who has a baby may continue to receive AFDC payments beyond her 18th birthday, regardless of school status.

labor market will mean that their earned incomes may not match the level of assistance available through AFDC, and that the limited benefits available through such dead-end jobs will not be likely to provide them with the level of basic health care insurance for their families available through MediCal. Consequently, there is a good probability that many Hmong will continue (1) to move away from large cities such as San Diego, where the cost of living is high but the employment opportunities for Hmong high school graduates are better, to more agricultural areas in California's Central Valley, where rental housing is much cheaper but educational and occupational opportunities are much more restricted -- thus trading immediate short-term gains for the family at the expense of long-term costs for their children; and (2) to rely on AFDC, MediCal, and Food Stamp as a rational short-term solution, albeit one which may only reproduce the same problems in the long-term.

The Lao:

The Lao are a highly individualistic and heterogeneous people, and in this research they were (except for the Chinese-Vietnamese) the least studied of the Southeast Asian groups, since the design of the qualitative portion of our project in the field focused mainly on the Vietnamese, the Khmer and the Hmong. Nevertheless, complete quantitative data were obtained for the Lao, as they were for all the refugee groups, concerning their educational attainment, occupational aspirations, and social adjustment. In addition, we were able to conduct occasional interviews with Lao youth, school counselors and teachers, social workers, and other community informants. Our observations of the Lao (and, for that matter, of the Chinese-Vietnamese) are thus admittedly limited, at least compared to the other three groups, but nonetheless ample enough to permit the following conclusions:

Although their parents do not have the least education among all refugees, Lao students were found to have the lowest GPAs of all the Southeast Asian groups, the least ambitious occupational aspirations, and (at about the same proportions as the Vietnamese) the highest rates of school suspensions and juvenile delinquency. The higher levels of Lao juvenile deviance seem in part to be linked not only to looser parental social controls and childrearing practices but also to the behavior reportedly exemplified by some Lao adults, including a relative preoccupation with recreational values and concerns. That the aspirations of Lao students are modest is reflected in teacher and counselor reports that they seem less preoccupied with succeeding in school than some other East Asian groups. Relative to the Vietnamese, the Lao will be much less likely to enter the primary labor market and much more

likely to enter the secondary labor market. Few, except for the Chinese-Lao and perhaps some of the more educated Lao, will pursue entrepreneurial opportunities and enter self-employment. It appears, according to local social workers and other community informants, that a segment of the Lao population -- particularly those Lao who do not come from the small urban educated elite -- reflect a lesser motivation for "hard work" and a greater disposition to seek "easy solutions" to problems. To the extent this is so, such a proclivity toward "easy solutions" will likely affect the young and their search for economic self-sufficiency. As a result, a substantial proportion of Lao refugees may continue opting to receive welfare assistance.

To put these findings in perspective, however, it should be added that although the Lao emerge in our analysis as the lowest performing and least ambitious of the Southeast Asian refugee groups, their youths nonetheless have better GPAs than many American ethnic-racial minorities, and they also reflect above-average standardized test scores, especially in mathematics computation. There is evidence of significant social class differences *within* the Lao group, as well as data suggesting that a significant minority of Lao youth -- especially the children of the most educated -- are doing very well in high school and effectively managing the transition to post-secondary schooling, something which is by comparison much more problematic for the Hmong. Another advantage of Lao youths is their extensive peer group support network which functions to provide both emotional and instrumental support during their school years. Like the Khmer, with whom they share many sociocultural elements, the Lao appear to have an open, accommodative stance in their acculturative process. Moreover, unlike the Khmer, the Lao have a much lower school dropout rate -- a rate that is also lower than the San Diego school district norms -- and they do not suffer the same level of emotional trauma or family disruption that is apparent among the Khmer survivors of the Pol Pot period. Nevertheless, in the totality of the evidence we have collected there is reason to be concerned about the Lao's trajectory toward economic self-sufficiency, and to invite follow-up systematic research to identify those problem areas most amenable to effective intervention.

A Final Note:

Much of this report has entailed an effort at comparative analysis of several ethnocultural refugee groups from Southeast Asia. The logic of our approach has been to identify general characteristics and patterns of response that distinguish these groups from each other and that serve to predict their likely paths to socioeconomic attainment in the United States. The cost of

such a nomothetic analysis, as always, is that while it grasps observable patterns at the group level it misses the full human variety that constitutes the group as well as the unique biographical elements of each refugee's story at the individual level. The reader, therefore, should not ignore the great diversity that exists within each of these groups or misinterpret our purpose in carrying out comparative characterizations of modal tendencies at the group level. We again underscore that our analyses should not be taken as portrayals of entire communities, for they are not; nor should they be taken as idiographic characterizations of entire persons, whatever their ethnocultural origins, for to do that would be sheer caricature. Thus, in an effort to convey a fuller understanding of and appreciation for the complexity of individual lives, we have sketched twelve detailed case histories of refugee youths (four Vietnamese, four Khmer, and four Hmong youths) based on our field work, and these are at the heart of our study. Hopefully their histories -- which are available for interested readers in a separate volume -- will serve both to deepen our analyses and to humanize our investigation.

Several of those case histories reveal the extraordinary accomplishments of these industrious and highly motivated young refugees, notwithstanding the tragedy and hardship of their circumstances. One Khmer youth in particular, Narong Chhay, struck us as remarkably resilient, exemplifying the adaptive possibilities of these refugees: despite all of his traumatic experiences during the Pol Pot period in Cambodia, nearly starving and living with death day-in and day-out, the loss of his homeland and his separation from his parents and other family members, Narong has not only been successful in school but has managed to remain confident and quintessentially optimistic, looking forward to helping others. He may never forget his once nightly nightmares (now down to about once a month), but he is able to live with them and thrive as a successful student and future electrical engineer or perhaps the future owner of an electrical repair shop. By whatever measures of "success" one might gauge this young man, far from being a burden to the United States he will be an example and an asset to his community and to his adoptive society. And so we feel, in general, will Southeast Asian youth.

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